Older Women and Men as Providers and Recipients of Unpaid Care Work in the Asia-Pacific Region
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1. Introduction

The older population in the Asia-Pacific region is growing more rapidly than in any other part of the world. Older persons, defined as people aged 60 years or over make up 13.6 per cent of the population in the Asia-Pacific region in 2020; this figure is expected to rise to 24.9 per cent in 2050 – or one quarter of the population. The percentage of the population aged 80 years or over, those more likely to require care, is rising even more rapidly, expected to increase from 1.7 per cent in 2020 to 4.9 per cent in 2050 (DESA, 2019a).

While healthy life expectancy is also on the rise, there is still a significant gap between life expectancy and healthy life expectancy. This means that many people in the Asia-Pacific region spend several years with impairments, and some of them may need full-time care for their daily activities. In Thailand, for example, life expectancy at birth is estimated at 76.8 years in 2015-2020, while healthy life expectancy at birth is estimated at 66.8 years in 2016 (DESA, 2019a and WHO, 2019). Moreover, because women’s life expectancy is higher than men’s in most countries, there are more older women than older men in the Asia-Pacific region, particularly in the group aged 80 years or over. In 2020, 53 per cent of people aged 60 or over are estimated to be women, while for those aged 80 years or over the figure is 63 per cent (DESA, 2019a).

In most countries of the Asia-Pacific region, older persons generally live with their children or other extended families, which means that they are likely to receive from or provide unpaid care to family members. In Bangladesh, for example, in 2014, 87.7 per cent of women aged 65 years or over were living with their extended family, compared to 65.0 per cent of men in that age group. Older men are more likely to live with their spouse only, which is 14.9 per cent of older men compared to 4.3 per cent of older women. But older women are more likely to live alone: 3.9 per cent of older women compared to only 0.5 per cent of older men live alone.

There is rising concern that population ageing may increase the demand for care, while there will be fewer caregivers, as indicated by the decreasing projected old-age support ratios. Older persons, in particular those 80 years or over, often need support regarding their health care, daily activities and social care – such as feeding, grooming and managing households – which is often provided by family members who are unpaid caregivers. Older persons may also need help with more intermittent activities such as monitoring their finances or managing medical conditions. If such care is provided, older persons will be able to maintain their health and independence and their quality of life will improve. It is important to note that older persons are not only recipients of care, they also provide care to others, including children or other older persons. Thus, when designing policies that address population ageing, it is important to understand the care needs of older persons, how the care needs change in the future and with age and also who provides such care. Since women in the Asia-Pacific region generally outlive men and have traditionally provided most of the care for older persons, a gender perspective to study older persons care needs should be applied to the analysis.
The Madrid International Plan of Action on Ageing provides a comprehensive framework to build societies for all ages. The Plan of Action uses a development approach to ageing and encourages strengthening older persons’ role as actors of development. “It is a resource for policymakers, suggesting ways for Governments, non-governmental organizations, and other actors to reorient the ways in which their societies perceive, interact with and care for their older citizens.” Under priority direction 3, “Older persons and development”, the Plan of Action recognizes the need for quality care and that older persons themselves are often caregivers.

The 2030 Agenda for Sustainable Development calls to “Ensure healthy lives and promote well-being for all at all ages” (Sustainable Development Goal 3) and to “Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate” (Sustainable Development Goal 5, target 4).

A first step towards recognizing and valuing unpaid care is to understand patterns of provision and consumption of care. Studying these patterns sheds light on potential care needs in the future, by projecting how demand and supply for care may change. The first part of this paper seeks to (a) document patterns of unpaid care provided and received by women and men of different ages in selected countries of the Asia-Pacific region; (b) project how these patterns may change in the future; and (c) provide recommendations to ensure the quality of care and to value unpaid care. The second part discusses a policy agenda with examples of how countries in the region and beyond design policies to recognize and value unpaid care.

2. Assesing who provides and receives unpaid care

2.1 Methodology and objectives

The paper uses data on unpaid care work performed by unpaid family and community caregivers in selected countries of the Asia-Pacific region, based on time-use survey data. Countries of different subregions and at different stages of the demographic transition are included in the analysis.

Although population ageing is most advanced in Europe, it has been very rapid in the Asia-Pacific region with many countries “getting old before they get rich”. Given Europe’s higher level of economic development, many European countries have more resources and potentially more flexibility to meet care needs through a combination of paid and unpaid providers. Asia and the Pacific is yet to establish strong systems of paid and unpaid care providers. Also, in comparison to European countries, care provided by families is cited as being culturally more appropriate.

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1 Political Declaration and Madrid International Plan of Action on Ageing, Foreword.
Time-use surveys are part of the National Transfer Accounts project (NTA, www.ntaccounts.org), an international research network focused on how population growth and changing population age structures influence economic growth, gender and generational equity, public finances, and other important features of the macro-economy. The work of the network contributes to the understanding of unpaid care work through the development of National Time Transfer Accounts (NTTA). NTAs are empirical estimates of how population groups in countries, disaggregated by age, produce, consume, save, and share market-based resources, while NTTA create the same empirical estimates for non-market unpaid care work. Furthermore, as unpaid care work has been traditionally thought of as “women’s work”, NTTA estimates are disaggregated by sex to understand the gender dimension of the production and consumption of unpaid care work. In Asia-Pacific, NTTAs are available in the following countries: Bangladesh, India, Mongolia, Thailand, Turkey and Viet Nam. Data from India are relatively dated, but still included in this study. More detailed explanations on the background of the methodology used for this paper are provided in annex I.

It is important to point out that time-use survey data available for each country come from different years, and some of the variation in the patterns could represent artifacts of different survey types or different understanding of survey instruments in diverse cultural settings. Most surveys include information from recent years. India is an exception, with its 1999 survey currently the only comprehensive, nationally representative time-use survey.ii

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ii Circumstances in India have changed since 1999; for example, India’s female labor force participation has fallen from 37.7 per cent in 2001 to 20.8 per cent in 2018 (ILO, no date). A new survey is being conducted, and new data are scheduled to be released in 2020.
2.2 Taking stock of care production and consumption

2.2.1 Work time by type

The first step of the analysis examines how people allocate their time between market and unpaid care work, which is reflected in Figure 1. It provides estimates of average hours spent on market and unpaid care work by age group for six countries in Asia and the Pacific.

Figure 1. Average time (hours) spent per week, by type of work and age

Source: See data appendix for time-use survey source details.

Market work includes time spent, both earning wages and working for a household-owned enterprise or farm, even if the person did not receive a wage for this work. Such unpaid family workers in market-based enterprises are already considered in many statistical systems as market workers and their production is imputed into existing national accounting frameworks. The estimates for market work also include time spent for commuting or for looking for work. The unpaid care work estimates include time spent providing indirect care, including general housework such as cooking, cleaning, laundry, household maintenance and management, and errands such as shopping and purchasing services for household use. They also include time spent providing direct care, whether for children or adults, or care for the community through volunteering or taking care of non-household members. As mentioned in the methodology discussion in annex I, only primary activities are included. Each country’s time use survey has some age cut off for children, below which data of unpaid care work performed by children are not collected either from them or through reporting of older household members. For the purposes of this analysis it is assumed that children in these unobserved age groups produce no work at all.
People in most age groups in Bangladesh, Mongolia, and Turkey are spending as much time in unpaid care work as in market work, as shown in figure 1. For most age group in India and Thailand, more hours per day are spent per week for market work than for unpaid care work, although there is a large amount of unpaid care work being produced. In Viet Nam, the picture varies by age: people aged 30-50 years perform as much market work as unpaid care work, while people aged 20-30 years and above 50 years perform more unpaid care work than market work. This finding shows that leaving out unpaid care work from the common understanding of “work” leaves a large proportion of work invisible.

People never stop performing unpaid care work, not even in the oldest age groups, particularly in Mongolia, Turkey and Viet Nam (see figure 1). In the oldest age group, people spend more hours per week performing unpaid care work than market work, and even in India, where the number of hours spent for market work is greater than for unpaid care work at all ages, the gap is lowest for the oldest persons, not counting children. The amounts of unpaid care work demonstrate that the “invisibility” of unpaid care work is an even greater “blind spot” when viewing the working lives of older persons relative to people in the peak market work stages of life.

In Mongolia, Thailand, Turkey and Viet Nam the curves for unpaid care work all follow an “M” shape, indicating that more time is spent for unpaid care work in the late 20s and 30s and again in the 70s than in other age groups. The first peak can be interpreted as care for children, while the second peak can be interpreted as care for grandchildren. This “M” shape contrasts with the idea that there is a “sandwich” generation of middle-aged persons tasked with caring simultaneously for children and ageing parents.

2.2.2 Gender differences in work time by type

A key research question in analysing unpaid care work concerns the gendered economy, as well as the system of norms, laws, preferences and any other social or political institutions which influence how men and women and girls and boys participate in economic life. Figures 2 and 3 provide estimates of average time spent per week by type of work, age and sex.
Figure 2. Average time (hours) spent per week, by type of work, age and sex

Across all countries and all age groups, men perform more market work than unpaid care work, while women perform more unpaid care work across all ages (see figure 2). The gender differentiation in time spent for unpaid care work versus market work is highest at ages 20 to 40 and lowest for the age groups below 20 and above 60 years. This is consistent with the lifecycle process of bearing and raising children which drives demand for unpaid care work. In addition, older persons today have most likely spent their adult lives in a world with more gender-related specialization.

In most countries – Bangladesh, India, Mongolia and Thailand – women who are older than 60 years perform more unpaid care work than men at any age, as shown in Figure 2. Only in Viet Nam, women in the highest age group (80 years or older) perform less unpaid care work than men, and men perform less unpaid care work in their 20s, 30s and 50s. In Bangladesh, Mongolia, Thailand and Turkey, women 60 years or older spend more time providing unpaid care work than men. Thus, men gradually “rest” when they get older, while women continue to perform unpaid care work, although to a lesser extent than when they were younger.

Source: See data appendix for time-use survey source details.
Figure 3 highlights gender variations in time spent by plotting the difference between men and women for each type of work. Differences are expressed as estimates for females – estimates for males, so lines above zero indicate that women are spending more time performing this work than men, while lines below zero indicate the opposite.

**Figure 3.** Gender differences in average time spent (hours per week) working at each age by type of work, for females minus males

![Graph showing gender differences in time spent working at each age by type of work](image)

Gaps are expressed as Female - Male.

Source: See data appendix for time-use survey source details.

The solid green lines for unpaid care work are generally all above zero at every age (there is a small exception for the oldest age group in Viet Nam) showing the broad pattern of female specialization in unpaid care work. The dashed green lines for market work are generally all below zero at every age indicating male specialization in market work. The solid black line is the gender difference in total work, and it is the sum of the unpaid care work and market work lines.

While in all countries, women spend more time performing unpaid care work than market work, the degree of specialization varies. Bangladesh, India and Turkey show the largest magnitude of differences between males and females, and thus the greatest degree of gender specialization by sector. Mongolia, Thailand and Viet Nam have much less gendered specialization. If the widest gap between men and women in unpaid care work versus market work is considered as an indicator of gender specialization in economic activity, then the six countries in order of largest to smallest gender gap are India, Bangladesh, Turkey, Mongolia, Thailand and Viet Nam. The
largest gender gaps in total work (the sum of unpaid care work and market work) can be observed for Mongolia and Viet Nam, indicating that in these two countries, women work more than men.

In Bangladesh and Turkey, women across all age groups spend as many hours on unpaid care work as men do on market work. Similarly, men spend as many hours on unpaid care work as women do on market work. The gender difference in total work is small in Bangladesh, with women having slightly more total work hours than men on average when they are young, but it reverses with the oldest ages. In Turkey, women’s greater total work hours are more consistent across age groups.

In Thailand and India, the patterns are similar to Bangladesh and Turkey, but women divide their time more equally between unpaid care work and market work, while men focus exclusively on market work.

Mongolia and Viet Nam display a “pattern where the provision of market work looks relatively gender equal – meaning that the time spent by men and women in the market is relatively equal, but women spent more hours on unpaid care work than men. These two countries share similar political-historic backgrounds, with an emphasis on gender equality in market labor force participation, but with women still more engaged in household activities. Similar patterns have been documented in some countries in Europe, such as Hungary and Slovenia (Sambt, et al., 2016).

The results also confirm several expectations, for example that older persons spend less time on market work than younger persons do. The more surprising result may be that older persons still spend considerable hours providing unpaid care, in particular older women aged 85 years or over. India is an exception where older men continue to work in the market, and in Viet Nam where both men and women spend about the same amount of time providing unpaid care. This is a reminder that the invisibility of unpaid care work means invisibility of the economic reality of older persons.

With many older women providing unpaid care, men might have problems adjusting given their less frequent exposure to unpaid care earlier in life. In addition, men may experience this change as very negative, if their culture has strict expectations of what is acceptable work for them. If one considers the provision of unpaid care by older persons to be part of “active ageing”, older men, who might hesitate to provide such care due to cultural bias, might feel more isolated and not “age well”.
2.2.3.  *Time-use analysis with consumption and transfers*

While so far the analysis had focused on unpaid care work and market work, the following discussion includes the consumption side of the care economy. Figure 4 shows the age patterns of consumption and transfers of unpaid care work.

**Figure 4. Age profiles of production, consumption, and transfers of unpaid care work, average hours per week**

![Figure 4: Age profiles of production, consumption, and transfers of unpaid care work](image)

Source: See data appendix for time-use survey source details.

As figure 4 illustrates, in all countries, children are the greatest consumers of unpaid care work, but at different levels of consumption across countries.\(^{iv}\) Infants in Viet Nam are estimated to consume over 60 hours per week of unpaid care work, while infants in Bangladesh consume just over 20 hours per week. The difference in the hours per week can be explained by the mathematics of the consumption imputation – care work produced in a household is divided among the persons in that household, including the children\(^{v}\). Thus, higher fertility levels and

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\(^{iv}\) The green consumption line merges with the purple transfer line at youngest ages because children are not producing any care themselves. All of their consumption is a net transfer from older ages.

\(^{v}\) Because of the assumption that unpaid care work is consumed at the same moment as it is produced, the difference between the production and consumption lines equal the net transfers of unpaid care work. This differs from figures 2
having larger households means more potential consumers per household which translates into smaller shares of unpaid care work received by household members. Household structure overall will have a significant impact on consumption estimates. Households are the major units through which private transfers flow from net producers to net consumers. Larger household sizes and more household complexity provide for more opportunities to share goods and services among household members, including the provision of unpaid care.

After about age 15, the consumption curves flatten in most countries, which means that people of working age are not receiving unpaid care services by family or household members. Persons between the ages 60 to 70 still provide net transfers of unpaid care work in Bangladesh, Mongolia, Thailand and Viet Nam. Unpaid care work consumption is somewhat higher for older age groups compared to working ages in Turkey, Mongolia and Viet Nam, but there is not much difference in other countries.

While the oldest persons in each country are receiving net transfers, the magnitude of such transfers is much less than those to children. Adults aged between 20 and 40 years old are spending a considerable amount of their time providing unpaid care.

It is important to distinguish consumption from transfers. Age groups that consume and produce the same amount of unpaid care will not make net transfers to other age groups. Net transfers are slightly positive at the oldest ages when older persons receive mostly small positive net transfers from household members.

The conclusion from this analysis is that children consume much more unpaid care work time than older persons. This is not because the latter consume so little care, but rather because they produce about as much as they consume in unpaid care work time, requiring, on average, only small net transfers at the oldest ages. This finding supports the finding that on a net basis, children consume more time of unpaid care, offered to them by other household members, than older persons.

2.2.4 Gender differences in transfers of unpaid care work

In the following section, unpaid care work transfers between men and women are analysed. Figure 5 shows the same net transfers as in figure 4 but disaggregated by sex. In all countries, women
are making net transfers of unpaid care work and men are receiving them. In no country do older men make net transfers of unpaid care work, in other words, older men always receive more unpaid care work than they provide. Older women, including those 85 years or over, make net transfers of unpaid care work in most countries, although the magnitudes are small. Only in Viet Nam, some age groups of men make net transfers of unpaid care work to other age or sex groups, and only in India and Viet Nam do the oldest women receive small net transfers.

**Figure 5. Age profiles of net transfers of unpaid care work, average hours per week, by sex**

![Graph showing age profiles of net transfers of unpaid care work](image)

Source: See data appendix for time-use survey source details.

The question arises as to who provides care to older women if they need it. In most cases, they will receive care from other women, often their sisters, daughters and granddaughters, but they will often not receive care from a male spouse, given their higher life expectancy and also confirmed by the existing living arrangements.

In summary, the estimates in figure 5 will be limited in detecting unpaid care work if there are within-household sex differences in care consumption among persons of the same age. They will also be limited if there are types of care that might not be recognized as “care” by survey respondents. Given these limitations, the sex differences in net transfers should be interpreted as a “lower bound” concerning the true difference in transfers for males and females.
Figure 6 provides estimates of the net transfer (or the difference between production and consumption of unpaid care work), differentiating between direct and indirect unpaid care work. Direct care consists of time spent on direct care for children, adults or the general community. Indirect care refers to “housework” and consists of cooking, cleaning, household maintenance and management, and other general activities. Values above zero indicate that the age/sex group receives net transfers, below zero that they make net transfers to other age groups.

Figure 6. Age profiles of net transfers of unpaid care work, average hours per week, by sex and type

Source: See data appendix for time-use survey source details.

In all countries, women are net providers of both housework and direct care, providing more care than they receive from others, except for women 80 years or older in India and Thailand. Males in all age groups, including the oldest old, are net receivers of household services, except for older men 80 years or over in Viet Nam. In most countries, except Viet Nam, men provide and receive direct care services across all age groups. Children receive the most net care, provided principally by women aged 20-40 years. Most of the unpaid care at higher ages is spent by providing household services to older men.

In Viet Nam, men provide significant net care to household members when they are between 20 and 30 years old. This result, however, might be biased due to the underlying small-scale survey
used for the analysis in Viet Nam. However, the findings for Viet Nam are similar to the ones in the Philippines where men provide a significant amount of unpaid care work to other household members, in particular if they are young or old.

### 2.2.5 Patterns of direct care by type of care recipient

The following analysis breaks down unpaid care work into different activities, namely housework, child-care, adult and community care.

Figure 7 has two parts showing average production of unpaid care work by type in the top panel and consumption of unpaid care work by type in the bottom panel. Results combine both sexes into one average line by age, and three types of direct care: childcare, adult and community care. Community care includes volunteering activities which benefit community members, and direct care activities benefit those who are not co-resident household members. Given data availability, only results for four countries are shown.

**Figure 7. Age profiles of production and consumption of unpaid care work, average hours per week, by type**

### a) Production

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vi Viet Nam is planning to add a time-use module in one of its large, nationally-representative household surveys.

vii Information shared in the National Time Transfer Account network.
Several findings can be drawn from Figure 7: one is that in all countries, indirect care or housework is the major production and consumption activity at almost all ages, although the degree varies. In terms of production, in Bangladesh and India, younger women (between 20 and 40 years old) are the main producers of housework, while in Mongolia and Thailand, older women (aged 60 years or over) are mostly engaged in housework. Furthermore, in Mongolia and Thailand, women are more involved in market work, indicating that older women play a larger role in housework.

In all countries, childcare is important but people devote less time to it than to housework. Women are the main producers of childcare, mostly as mothers. Once children reach school age, time dedicated to childcare declines substantially. Overlaps exist between childcare and housework: most women usually do some housework while also supervising their children.

As indicated in figure 7, care for adults and community members is not very important. As discussed, this may be a “real” finding, but is also likely affected by measurement differences. People may have a much clearer idea of childcare as a type of work, while care for adults could also be combined with leisure activities. For example, when an adult child visits an elderly father, that time probably combines care with socializing; thus, the data might be coded as “leisure activity”. Care for older persons is less frequent than the daily duties of childcare, so care for older persons measured in a survey will have a higher variance than childcare. Older persons consume

Source: See data appendix for time-use survey source detail
and produce mainly housework. In India and Mongolia, however, a minimal amount of direct care is consumed by older persons. If more affordable professional childcare facilities were available, women could use some of the extra time in the market.

Figure 8 shows net transfers of direct care by sex and by type of care, the difference between the consumption and production lines (figure 7). One can observe that women provide net transfers of childcare up to very old ages, although at a declining rate. Still, older persons are important suppliers of childcare. Also, the magnitude of net transfers of community care and adult care are minimal compared to net transfers of childcare.

**Figure 8. Age profiles of net direct care transfers by sex and type of care recipient**

Source: See data appendix for time-use survey source details.

### 2.3 Visualizing transfers of unpaid care work

Figure 9 shows four panels or contour plots representing a matrix of transfers of unpaid care work for each of the four countries for which survey data are available. The panels indicate the average amount of time produced by one person and consumed by another, by age and sex.

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viii For Mongolia and India, a sample of that country’s household structure was made a part of the time use survey – for those countries the full household roster by age and sex was available for each household that had a time use respondent. For Thailand and Bangladesh, only the age and sex of the time use respondents was recorded, but there
Along the horizontal axis are the age and sex of the producers and along the vertical axis are the age and sex of the consumers. Thus, each country panel has four quadrants representing the following transfers: bottom left: male to male; top right: female to female; bottom right: female to male; and top left: male to female. Along the diagonals are unpaid care work transfers from an age or sex group to the same age or sex group.

Figure 9 shows that the left side is mostly dark blue, representing transfers from men, with a few green spots, for all countries. This means that most time transfers from men are of less than one hour per day. In some cases, men provide time transfers of 2 to 3 hours for young children. In India and Thailand, however, the left side is entirely blue. Notably, Thailand has the lowest volume of transfers of any country.

Figure 9. Average unpaid care work time by producer and consumer, by age and sex, in hours per week

It was a great deal of additional data on the household. Using this additional data, time production for each respondent was imputed onto individuals from census samples so that their full household structure was known.
Note: Areas in red represent an average transfer of over 4 hours per week; areas in yellow represent average transfers of 3–4 hours; areas in green represent transfers of 2–3 hours; areas in light blue represent transfers of 1–2 hours, and areas in dark blue represent transfers of under one hour. Averages are per time producer/consumer.

Source: See data appendix for time-use survey source details.

The plots for Bangladesh and India look very similar and, in contrast to Thailand, show some regions of large transfer volume. As in Thailand, though, these significant transfer volume areas are on the right-hand side of the country contour plot, indicating that women make the transfers. Some men in Bangladesh make transfers, but they are smaller. Transfers along the diagonal of the bottom right quadrant of a plot indicate unpaid care work transfers from women to similarly aged or slightly older men – most likely to be husband and wife. Such transfers are reduced at oldest ages. Women make the largest transfers to boys (bottom right quadrant) and girls (upper right quadrant) – which can be interpreted as transfers from mothers to sons and daughters, as shown by the red areas for transfers to the youngest ages. Older women – likely to be grandmothers - make transfers to children in the green areas that extend along the youngest age recipient rows out to older ages groups for women care providers.

Mothers and grandmothers transfer slightly more time to sons and grandsons compared to daughters and granddaughters because the areas of transfers to young boys are slightly larger than for young girls. This could be preferential treatment, or it could stem from boys requiring more care. Another explanation could be that this is a distribution effect from sex-selection causing sex ratios for young children tilted toward boys. With more boys than girls, mothers and grandmothers will make greater transfers on average to the former, even if on average boys and girls receive the same care.

Mongolia appears to have the most diversified unpaid care work system, with men, in particular older men, spending more time to care for children and wives. This indicates that older Mongolian men may take a greater role in caring for their children, grandchildren and wives than men in many other countries.

The nature of a country’s transfer system may have implications for how well the system can respond to changes in the age, sex and household composition of a society. It may be that a more diversified transfer system like in Mongolia has greater adaptability than the more restricted system in India. One way to better understand how the unpaid care work transfer system may adapt to the future is to use projections. This type of analysis is discussed in the following section.
2.4 Projections for the unpaid economy with changing populations age structures

The previous set of analyses shows that countries spend as much as, if not more time on unpaid care work than on market work. The provision of unpaid care work sustains societies, maintains well-being, enables market work and helps families to raise children and support older persons. Given the rapid ageing of the population in many countries of Asia and the Pacific, it is important to gauge whether the supply of unpaid care work will be sufficient in the future.

The previous section showed that demand and supply of unpaid care work are influenced by the age and sex structure of the population. One can project future demand and supply of care work by applying current fixed age and sex disaggregated supply and demand profiles for such work to age- and sex disaggregated population projections.

Figure 10 shows projected unpaid care work support ratios (units of unpaid care work production per unit unpaid care work consumption). Increases in the ratio indicate that a specific level of consumption becomes easier to support with more units of available supply relative to demand. Decreases mean that the current per capita consumption patterns are not sustainable.

**Figure 10. Unpaid care work support ratios, by country and type of unpaid care work**

Source: See data appendix for time-use survey source details.
The various age- and sex-specific schedules of different types of unpaid care work production and consumption (as shown in figure 7, but for a single sex combined), are weighted by population projections by age and sex. This calculation is performed for the production/consumption ratio for the following six different groupings of unpaid care work: all unpaid care work combined; general housework; direct care; direct care for children; direct care for adults; and community care activities.

Each of the six panels shows the unpaid care support ratio disaggregated by type of care. Because different types of care production or consumption favour particular age cohorts, these age groups grow at different rates in the projected population.

The overall unpaid care work support ratio is relatively stable over time in all countries, because of slight decreases in the housework support ratio and increases in the direct care support ratio. It becomes easier to supply the necessary care over time because children are very “expensive” in terms of unpaid care work and ageing populations have fewer children. It becomes more difficult over time to provide the necessary care to older persons because the average age of the adult care consumer is significantly greater than the average age of the adult care producer. Because the net transfers of unpaid care work to adults are so much smaller than to children, however, the overall unpaid care work support ratio is largely unaffected.

Overall, it does not appear that changing population age structures will strain the care provision system, yet this may only be the case if childcare and care for older persons and other adults can be substituted for one another, and, what is more, women decide to continue spending most of their time providing unpaid care.

This type of calculation – combining childcare with other types of care – makes the implicit assumption that all direct care is fungible across care recipients. Women in their peak childrearing ages are the main suppliers of care to young children. It is unlikely to assume that young women of future generations will be willing to switch their care supply from the young children they “did not have” to older parents they do have. Those young women will certainly have more education than previous generations. They will likely have career aspirations more similar to their male peers, which could mean higher female labour force participation and less time for caregiving.

From a policy perspective, it would not be desirable that educated women continue to spend most of their time providing unpaid care, while in ageing societies the number of people of working age also shrinks. An important policy response to declining working-age populations would be raising overall labour force participation, best achieved by increasing women’s labour

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ix The detailed care sub-type data which would be necessary to include Viet Nam and Turkey in the bottom row of graphs in Figure 4.1 for different types of direct care are not currently available.
force participation. This would also require offering more options for affordable professional childcare. Thus, when policymakers design policies for ageing societies in which families play an important role, they should remember patterns of time allocation between care work and market work. Only under the assumption that there is no change in the supply of unpaid care work, is there not a mismatch between demand and supply of care.

2.5 Summary of research findings

In the first part of this study, the paper has described and analyzed patterns of unpaid care work produced and consumed by men and women of different ages in the Asia-Pacific region. The main findings are:

- Unpaid care work represents a large part of the economy, and much of this work is performed by older persons.
- Although both men and women perform unpaid care and market work, women, of all ages, perform the majority of this work compared to men in all countries included in this study.
- Older persons are net producers of care, which means they produce more unpaid care work than they consume.
- Children consume by far the most unpaid care work. Older persons, on average, consume much less than children.
- Older women provide much of the care consumed by older persons. They also provide an overwhelming amount of time of unpaid care work to younger family and community members, while men contribute very little.
- Older women surviving their spouses are at a great risk of not receiving care when they need it.
- Due to the different underlying cultural and socio-economic conditions, countries offer different systems of unpaid care work. Men and women of different age groups differ in providing such care work and making use of it.
3. **A policy agenda to recognize and value unpaid care work**

Thus far, the analysis in this paper showed that given current and future levels and trends in population ageing in Asia and the Pacific, society has to pay more attention to the care economy to support those who need and provide care.

3.1 **Policy considerations**

There are several policy considerations that should be highlighted:

**Making unpaid care work visible**: Unpaid care work plays an important role in the economy and is largely invisible. The provision of unpaid care work is often taken for granted by policymakers, in particular when they consider that caring for older persons is the sole responsibility of the family. The analysis has shown that this care work is mostly provided by women of all ages, at almost no cost to the government. Legislation recognizing the value of unpaid care is needed to make the invisible caregiver visible and elevate his/her status in society.

**Recognizing unpaid care work financially**: With the unpaid care work older women perform, they support younger women to do both, work in the market and provide unpaid care for children and older persons. This raises concerns about equity and fairness of the system. While the distribution may be “fair” in terms of the time spent, men tend to perform more market work which provides them with income and better social protection coverage, while women perform unpaid care work without being covered by social protection. There is a need to financially recognize unpaid care work, performed by mostly women, through cash transfers or additional social security benefits.

**Protecting the rights of unpaid caregivers**: Unpaid caregivers, often balancing work in the market and at home, are at risk of overwork, discrimination and abuse. Sometimes, the person receiving care does take the caregiver for granted, demanding attention and care that often goes beyond the ability of the caregiver. At the same time, employers supervising women in the workplace often do not recognize that many of them also provide unpaid care for children and older persons. Some employers show no flexibility towards women when it comes to balancing market work and caregiving. They might also discriminate against women who try to balance these double responsibilities, denying them professional development opportunities.

**Addressing the vulnerability of female caregivers**: Older women providing unpaid care are in a particularly vulnerable situation. They typically provide unpaid care throughout their working-age life and continue to provide unpaid care, often to other older persons, when they are older. They typically depend on financial support from their husbands, which makes them vulnerable when their husbands pass away. Policymakers must find ways to monitor the vulnerability of
older women. Further, covering women through social protection throughout the life cycle is crucial.

**Recognizing older persons as a resource:** Older women provide significant amounts of care, and there is an untapped resource, which is older men. Older men and women should be recognized as development actors. Both older men and women should be encouraged to remain active in the workplace beyond their statutory retirement age, if they wish to do so. They could be a resource for younger people, providing institutional knowledge of the workplace, know-how and experience which could be of value to younger generations. Moreover, older men who cannot or do not wish to continue in their workplace should be tapped as a resource for the provision of unpaid care. In societies with some gender specialization, some unpaid care to men may be better provided by other men. Similarly, older men could also provide care to children.

**Investing in the health and well-being of older persons over the life course:** Ensuring that people stay healthy for a longer time by shifting towards more preventive care will be important to allow older persons to remain active and productive members of society. Moreover, health systems must provide cost-effective ways for older persons to manage non-communicable diseases and support them in activities of daily living with technologies and assistive devices.

**Providing affordable alternatives to unpaid care work:** Since younger women spend significant amounts of time on childcare, unpaid care work is a key barrier to women’s participation in the paid labour force. Women’s participation in the paid labour force, however, is crucial for their economic and social empowerment, which promotes gender equality, and, will be important to maintain sustainable economic growth in ageing societies. Providing affordable quality childcare will be crucial to allow women to reduce the time spent on unpaid care and spend more time on market work.

**Ensuring the provision of quality care for older persons:** While older persons are net providers of care, those older persons who consume care may have significant care needs, such as persons with dementia or stroke patients. To ensure the quality of care, adequate training is necessary, which in turn could contribute to increasing the recognition of the provision of care. Supporting female and male family or community care providers who receive adequate training should be considered, and caregivers who receive such training should be rewarded for their efforts.

**Encouraging intra-household redistribution of unpaid care work:** Encouraging more men of all ages to provide unpaid care work is crucial to promote gender equality and active ageing. Research has shown that involvement of fathers in children’s education is important for their development. Further, volunteer work, such as providing unpaid care work, can also be crucial for the well-being of older persons because it promotes their social connectedness and a sense of fulfillment. If men provide unpaid care work at younger ages, they will be more likely to continue providing unpaid care work when they are old, similar to what women do. Policies like paternity
leave and flexible work arrangements would make unpaid care work more visible and valued, which, in turn, could encourage men to perform this kind of work at older ages. Older persons’ associations or other volunteer organizations, depending on country context, could be instrumental in defining roles for older men in providing community service.

**Generating more data and conducting more research on how men and women of all ages use their time and distribute the time between unpaid care work, market work and leisure:** This paper sheds light on many of these issues, but only for those countries with a high-quality time-use survey. It is important that more surveys of this kind are conducted in more countries, especially low-income countries where these data are rare, so that discussions and policymaking is evidence-based. Policymakers must support data gathering and research on the care needs of older persons to ensure that these needs are not being underestimated.

### 3.2 Policy examples

Several countries and areas in the Asia-Pacific region are already adopting and implementing policies to more fully recognize unpaid care workers. Some implement these policies because they are in line with their cultural values in support of family care, while others prefer to support professional care over unpaid family care. The following sections present examples on access to paid care from Asia and the Pacific and countries outside the region.

#### 3.2.1 Increasing access to paid care

**Childcare**

The research findings show that most of the unpaid care is provided to children, while some is provided to older persons. Consequently, many policies focus on increasing access to quality childcare, which is also essential to facilitate labour market participation of women.

Australia, for example, has several policies in place which facilitate access to affordable childcare and support to family caregivers. Since July 2018, child subsidies are paid directly to care providers and are passed on to families through a fee reduction. The subsidies are higher for low income families and are not paid for high-income families (Australian Government, Department of Education, Skills and Employment, no date). The Fair Work Act of 2009 and the parental leave programme also compensate parents who provide unpaid care to their children and stipulates the right to flexible working hours to parents of children with disabilities (Australian Government, Federal Register of Legislation, 2009).

In 2019, Japan launched a new Government programme to provide free preschool education and childcare for all families with children between the ages of 3 and 5 years. For low-income families, free childcare is already provided for children aged 2 years or over. This applies to the use of all
preschool education or childcare facilities—not just *ninka hoikuen*, or licensed daycare centres, for which the central government covers operating costs. While there are still challenges to meet the expected demand, making it free of charge is an important step towards reducing the burden of unpaid care workers (Japan Times, 8 October 2019).

In developing countries, while systems are still evolving, efforts are being made to expand childcare provision. China, for example, has issued the National Programme of Action for Child Development in China (2011-2020). The programme highlights the importance of providing early childhood education for children under the age of three. It also calls for professional training in the field of early childhood education (China National Working Committee on Women and Children under State Council, no date). In India, the Government introduced the Rajiv Ghandi National Creche scheme in 2015 to provide daycare services for children of working mothers up to the age of six. Fees for daycare services are staggered by income group, with lower fees for low income families. In obtaining creche places, preference is given to the poor. In 2018/19, there were over 21,000 creches reported in different Indian states (Government of India, 2008).

**Box. The challenge of changing sociocultural norms: policies in the Republic of Korea to raise women’s labour force participation**

The Republic of Korea adopted policies to reduce the burden of unpaid care work of women and increase women’s labour force participation. The labour force participation rate of women matches that of men until the age of 30, but falls for those between 30 and 40 years, following marriage and childbirth. Policies introduced include maternity and parental leave as well as providing professional childcare free of charge.

In 2001, the Government introduced both paid maternity leave for 90 days as well as parental leave of one year. Although more people have been taking maternity leave since its introduction, women still tend to withdraw from the labour market before giving birth rather than staying employed and making use of maternity leave. In 2014, only 35.6 per cent of mothers giving birth were in employment at the point of giving birth. The parental leave provisions have been revised in 2008 to encourage fathers to take up parental leave. It allows parents in two-income households to each take up to one year of leave or reduce working time to care for children up to the age of 8 years old. Although the number of fathers taking parental leave has increased over time, only 4.5 per cent of fathers take parental leave, compared to 17.0 per cent of women giving birth.

Since 2006, the Government has also raised public spending on childcare and pre-primary education. In 2013, it decided to provide 12 hours per day of free childcare for all children up to 5 years old. As a result, the share of children aged between 0 and 2 years old rose from 11 per cent in 2006 to 34 per cent in 2013. However, supply of childcare has not met the increasing demand. In 2016, restrictions for free childcare were introduced. The free full-day support was limited to families that meet at least one of the following criteria: have at least two earners or two
unemployed parents, more than one child, a single parent, a mother who is pregnant, or a parent with disabilities.

Long working hours and the expectation by managers to perform such working hours were identified as a major barrier to men providing more unpaid care work as well as to women taking up employment. Men provide only an average of 45 minutes of unpaid care work per day, the lowest share in the OECD. Women in employed in the labour market had the longest working hours in the OECD in 2014. In 2018, the Government passed a bill to reduce the maximum work hours allowed from 68 to 52 hours (NPR, no date), still very long compared to other OECD countries, where 40 hours or less are the norm.


**Long-term care**

Long-term care of older persons, but also of younger persons with disabilities, in Asia and the Pacific is predominantly performed by unpaid care workers. In many developing countries, the number of private care homes or care villages is increasing yet can normally be afforded only by the most affluent income groups.

The introduction of long-term care insurance in Japan and the Republic of Korea has increased the availability and affordability of professional care options and reduced the burden on families. The Republic of Korea introduced its long-term care insurance in 2008. Before this, long-term care provision by unpaid family members was the norm, while only 1 per cent of all older persons had access to publicly provided long-term care. Long-term care insurance increased the availability of professional care services, particularly home-based services. Since the long-term care insurance system provides a voucher system, older persons can choose their service provider and type of services. Cash transfers to family caregivers are limited out of concern that family caregivers could take cash transfers without providing care services and to avoid pressure on predominantly female family members to provide home care (ESCAP, 2015a). However, there is a special cash benefit of KW150,000 monthly for care recipients, regardless the care level, who receive strong support from their families. Cash transfers are the exception, though, amounting to only 0.02 per cent of all long-term care expenditure. According to survey data, the percentage of older persons expecting their families to provide care for them has been declining steadily since 2008, and there is more acceptance of professional care providers (Statistics Korea, 2018).

Japan introduced its long-term care insurance in 2000, which is linked to a comprehensive system with different care options including residential services, community services and residential care. Prior to this, there was a long debate whether cash transfers to family caregivers should be

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\*Information from the Ministry of Health and Welfare of the Republic of Korea, personal conversation.
allowed. While some groups felt unpaid care work should be recognized and paid, others expressed concerns that cash transfers would force women into family care work. At the end, no provisions were made to allow cash transfers. In 2013, among certified long-term care insurance recipients living at home, 71 and 15 per cent were receiving care from their family and from a service provider, respectively. The latter percentage had risen from 9 per cent in 2001 (ESCAP, 2015b).

3.2.2 Providing social protection to unpaid care workers

Unpaid care workers provide important contributions to society; this tends not be measured by GDP, while such workers have limited access to social protection. Social protection would provide adequate recognition to unpaid care work, offer minimum protection and encourage more men to perform unpaid care work.

In Australia, the national Paid Parental Leave scheme includes two payments: parental leave pay and “Dad and partner pay”. The latter provides eligible working dads or partners with up to two weeks’ pay at the national minimum wage. Full-time, part-time, casual, seasonal, contract and self-employed workers may be eligible. Fathers or partners have to be on unpaid leave or not working to receive the payment. The role of employers in “Dad and partner pay” is to make unpaid leave accessible to their eligible employees (Australian Government, no date). The evaluation of the programme demonstrated that fathers’ uptake of unpaid leave in the first two months after the partners gave birth increased by about 7 percentage points, showing that the scheme reduced concerns by fathers to make use of paternity leave. The scheme also had a positive impact on the average duration of leave taken by fathers (Martin et al, 2014).

Pension systems can also include provisions to ensure social protection for unpaid care work. Several European OECD countries provide child credits - typically tax-funded - for women who have interrupted their careers to care for children. Benefits are calculated as if the women had contributed to the pension system while looking after their children. In Japan, women receive childcare credits for up to three years. Benefits are based on contributions before the childcare period. Simulations have shown that Japanese women who interrupt their careers for 10 years for childcare receive 92 per cent of the benefits of women without interrupted careers. In Sweden, women and men, for example, are both eligible for these credits, depending on which parent decides to interrupt their career. The credit is tax-funded and interacts with the parental leave programme, in which parental leave benefits are pensionable income (OECD, 2015).

In Malaysia, the Government introduced a housewife pension scheme in 2018. The pension scheme encourages contributions of husbands to the account of their wives to provide unpaid care work. These contributions are topped up by the Government. The Government plans that in the future, 2 per cent of the husbands’ salaries will be deducted into their wives’ pensions accounts, but legislative changes will be needed to implement this plan (The Star, 8 August 2018).
Brazil’s so-called “Housewife Policy” addresses the specific needs of unpaid care workers and aims at adapting social security and other benefits, such as pensions. In 2005, the Constitution was amended to ensure that the pension system included special coverage of low-income workers and unpaid care workers. Since 2006, Brazil has sought to include unpaid care workers in its social security provisions by reducing the rate of contributions made by low- or non-income earners, from 20 to 11 per cent of the national minimum wage (OECD, 2019).

Germany has a mandatory long-term care insurance, which also finances social protection of caregivers. The system includes cash transfers to family caregivers and provides a paid care substitute to the family caregiver for up to six weeks per calendar year to cover illness and holidays. The cash benefits to family caregivers vary by care level and number of days care is provided. Care beneficiaries can also combine family care with short-term residential care. Moreover, the long-term care insurance covers pension and unemployment insurance of the caregiver. Since 2017, family caregivers are entitled to receive professional training and reduced or flexible working hours at their workplace (Federal Ministry of Health, 2017). In 2014, there were 2.6 million care recipients, out of them 66 per cent were receiving home-based care (Federal Ministry of Health, 2014). The shortage of professional caregivers often puts pressure on families to provide home-based care.

3.3 Recommendations

In line with the Madrid International Plan of Action on Ageing and the 2030 Agenda for Sustainable Development, in particular Sustainable Development Goal target 5.4, the paper makes the following recommendations:

- Expand options for the provision of affordable quality care for children and older persons. This begins with ensuring that child or elder care facilities are available and staffed with trained personnel, at no or minimal costs to the users of such facilities. The lack of care facilities is often the key bottleneck in implementing policies aimed at ensuring access to care.
- Provide social protection to unpaid care workers, which should start with access to health care, but also include schemes, such as access to pensions and/or cash transfers to unpaid care workers. When cash transfers are provided, a mechanism needs to be found to ensure the provision of quality care.
- Provide support and social protection to older women who are providers of unpaid care, such as healthcare and/or cash transfers.
- Provide options for affordable and quality professional care for older persons, with the availability of home care and community care to allow ageing in place. Adequate training of care providers will be important to ensure quality care.
- Introduce long-term care insurance, independent from health insurance, to finance quality care for older persons. Long-term care insurance may also be used to provide social protection to unpaid family care givers and provide training for family care givers.
• Ensure a more family-friendly work culture, avoiding overly long working hours and giving provisions for part-time work and flexible work arrangements to allow women and men to combine care work with paid work.
• Reduce the demand for unpaid care by ensuring the availability and affordability of quality childcare by providing subsidies directly to care providers or offer childcare free of charge or with staggered fees by income group.
• Encourage men to provide unpaid care work throughout the life cycle so they already establish the habit of providing unpaid care work when they are older. Examples for such measures are provisions for parental leave for fathers with incentives for fathers to take parental leave, including through changing the work culture.
• Identify the barriers for men to take unpaid care work throughout the life cycle and address the root causes of these barriers, depending on country and cultural context.
• Conduct research and collect data on the provision of unpaid care by men and women and by people of different ages through time-use surveys.
Reference


term%20care%20for%20older%20persons%20in%20the%20Republic%20of%20Korea.pdf


Annex I: Background on methodology

1. Overview on National Time Transfer Accounts

National Time Transfer Accounts (NTTA) follow a longstanding tradition of social scientists who have criticized standard measures of economic activity for various reasons, one of which has been that they leave out unpaid care work (Economist, 2016; Waring, 1999). National accounts, the system of cross-country comparative estimates of economic flows that is the basis for such well-known economic aggregates as Gross Domestic Product (GDP), include some flows but exclude others. Specifically, national accounts cover flows arising from the production and consumption of goods and services traded in a market for money: “market goods and services.” They do not consist exclusively of market-traded items, however, as they include some flows not traded in markets for money. The value produced by owner-occupied housing consumed by those living in that housing is included, as are some types of financial transactions and services that are not bought and sold in markets. Because these flows are not traded, economists and accountants have developed indicators to measure these flows and thus impute their value in national accounts (U.S. Bureau of Economic Analysis, 2008). The production and consumption of goods produced by households for their own use, mostly the value of grown food, is another kind of flow not traded in a market but imputed into national accounting measures of total production and consumption. The value of home-produced services is not included in the national accounts production boundary.

This aspect of economic life has been referred to as: unpaid care work, household production, unpaid household services, and others. The present paper uses the term “unpaid care work”. Unpaid care work time inputs include productive activity by persons that is not already accounted for in national accounts.\textsuperscript{xi}

Unpaid care work includes time spent in both direct care activities such as taking care of children, older persons, sick persons or persons with disabilities, and of the community through volunteer activities, but also the indirect care activities of managing and maintaining a household. Cooking, cleaning, household management and maintenance are some of the activities included as indirect care activities.

While many researchers and advocates have long noted that unpaid care work is a valuable economic activity, no statistical agencies or international organization explicitly include it in their work plans, goals, and reporting. Unpaid care work has been recognized in sustainable development goal 5 of the 2030 Agenda for Sustainable Development\textsuperscript{xii} (see also International

\textsuperscript{xi} The aspect of unpaid care work as produced “by persons” is important as it separates this work from other critiques of what has been left out of national accounting. One of the most significant critiques is that national accounting does not include the value of the earth’s natural resources or the flow of services it provides, such as producing clean air and water.

\textsuperscript{xii} https://sustainabledevelopment.un.org/sdg5
Labour Organization, 2018). While this represents progress, more efforts are needed to collect, compile and analyse consistent, comparable and timely data on unpaid care across countries. In the meantime, indirect estimates of unpaid care work can be derived by, by using time-use surveys to gauge how much time people spend in this type of production (Landefeld et al., 2009; Abraham and Mackie, 2005).

The NTTA approach brings a framework, that explicitly acknowledges the role of age in determining much of the variation in the production of unpaid care work to this methodology. As unpaid care work is largely influenced by the lifecycle processes of birth, marriage, household formation, ageing and death, a focus on the age dimension is necessary to understand unpaid care work and design evidence-based policies that address it. Much analysis on unpaid care work has focused on just one particular age group with a very wide age band, often those in their peak working or childbearing ages, rather than focusing on how patterns of unpaid care work change by age. Indeed, in some countries where age-dependent phenomena like marriage happen at very specific ages, any banded age group averages may obscure much of the patterns of unpaid care work that need to be analysed to understand the distribution across age groups.

In addition to an improved focus on age, the NTTA approach allows the whole system of exchange of unpaid care work between persons, beyond production, to be studied. It is important to remember that the National Transfer Accounts (NTA) framework (Lee and Mason, 2011; United Nations, 2013) presents an existing methodology for imputing the consumption of market goods and services to individuals. Applying the methodology of national transfer accounts to unpaid care work services reveals the same system of transfers between persons in the unpaid care work economy that NTA has revealed in the market economy – young and old in different countries and regions have different levels of “dependency” relative to the productive capacities of workers in “peak age. People of working age provide for young and old dependents in different ways and with different generational arrangements.

This paper uses a hybrid methodology – combining traditional methodology to estimate household production satellite accounts with the NTA framework to impute consumption and transfers of caregiving activities. This methodology is called NTTA and has been developed by the Counting Women’s Work project (National Transfer Accounts, 2017). It brings a greater focus on the age dimension of unpaid care work than previous research and allows the application to the study of unpaid care work in ageing societies. It also includes a methodology to impute unpaid care work consumption which would be much harder to observe directly.
1.1. Production data

To produce estimates on time-use by men and women in different age groups, namely NTTA household production satellite accounting is followed (Pan American Health Organization, 2010). The methodology requires time-use survey data, such as a time diary surveys where respondents tell survey takers what activities they were engaged in over a certain time period. These activities are coded using a comprehensive coding scheme. Another type of available time-use survey data is a comprehensive set of questions on time spent on each of a set of specific activities. If these activities are sufficiently detailed, then a full set of unpaid care work activities and a comprehensive picture of unpaid care work can be obtained.

It would be desirable for NTTA to cover activities that would be included in national income if they were performed for wages instead of by non-market labour. One way to determine if an activity meets this standard is the “third party criterion”: a third person could be paid to perform the task and still receive the benefit from it (Reid, 1934). Activities like sleeping, eating, sports and leisure would not be included, as paying a third person for it would not be of benefit. Any home management or care activities, on the other hand, would qualify by this criterion as another person could be paid to perform these activities and the payor would benefit from the service. Another way to think about which activities should be recorded or not is that they must not be recorded as part of national income as currently constituted but could be if they were contracted for.

Separating and defining different activities is an important part of the methodology, and there are many different ways to classify activities. The countries in this study use different classifications, adapted to their own context and needs; this results in variation in how detailed countries can be analyzed when accounting for care. The coding schemes and which activities qualify as unpaid care work for each of the countries are available in annex II. In general, surveys distinguish between childcare and all other types of care. This reduces analytical power for studying care of older persons, but the age of the producer of the care, and the household structure, are available to give clues as to whether care is being produced or consumed by an older person.

Once all unpaid care work activities have been identified, the average time spent by each respondent in each type of unpaid care work can be estimated. Keeping these estimates separate by age and sex allows to focus attention on older persons and also acknowledge the historical division of labour between men and women – there is no country in the “Counting Women’s Work” project where women are not the main suppliers of unpaid care work. As such, an “average” that is not gender-disaggregated is bound to be misleading. The sex-specific age schedules of care production are modified with a cross-validation smoother called Friedman’s Supersmoother (Friedman, 1984), which reduces sampling noise and makes figures easier to view.
A final note on estimating unpaid care work production involves “multitasking.” Some surveys try to evaluate the extent to which people are doing more than one activity at a time. Such surveys query respondents to see if any activities were being done simultaneously, or if there was a secondary activity the respondent was also doing at the time as the first activity that was reported. Another option is to focus on a particular type of multitasking, such as having supervisory responsibility for young children while also engaged in another task. Unfortunately, the variation in accounting for multitasking in the surveys means that they are not very comparable from country to country. They are hence left out of this analysis, with only the indicated primary activity examined in the paper. However, research that does include multitasking suggests that it is of large magnitude (Folbre, 2018). Most of this research focuses on the multitasking with care of young children, but it could also be significant with care for older persons. Hopefully time-use surveys in the future will agree upon an instrument to measure multiple activities and future research will include it in cross-country comparative work.

1.2. Estimating consumption in NTTAs

To measure consumption of unpaid care services based on time-use survey data, certain assumptions have to be made. The NTTA production accounts give data on the time of unpaid care that is produced. It is assumed that the value of time produced is consumed by household members, even though people are not directly observed consuming it. Thus, the value of time produced in a household is allocated to household members under consumed time.

For general housework activities within the household (such as cooking, cleaning, household management and maintenance), also called “indirect care,” the time produced is divided equally among all household members. For example, a household with four members has a time-use survey respondent who reports producing one hour of cooking on the survey day. The consumption of this cooking time for the four people in this household, including the survey respondent, is assumed to be fifteen minutes each. This makes most sense theoretically because the consumption of these activities is generally uniform across the household, or at least the data to make finer consumption distinctions such as which family member consumed how much at each meal, or how many hours each household member spent at home, is not available.

For direct care activities within the household, (childcare, adult care or eldercare), such equal allocation would not be reasonable. The very young and very old consume much more in direct care than those in mid-life. For this reason, a regression approach is used, that exploits household structure to create weights to apportion the amount of direct care produced in a household.

Specifically, if households are observed to each produce some amount of childcare, a household-level regression model on the survey data for each producer of direct care can be used. This model will allow to regress each producer’s amount of childcare produced on the number of household members in each child age or sex group. The regression coefficients on each age and sex group
then become weights that can be used to apportion the household amount of childcare that is produced in each household by each time-use respondent to each child in that household. Similarly, for adult care, the household production of adult care can be regressed by each time-use respondent and the number of adults in each age or sex group. It should be noted that for either type of care, the producer is not included in the regression estimation even if in the target age group because he or she is not a potential target of the care. The coding of self-care is different in all activity schemes from care for other persons. This regression approach is somewhat limited in that it works by detecting the variability between households of different age and sex composition and cannot detect differences within households where individuals of similar age and sex may actually receive different levels of care. This is most relevant as regards to the sex differences in care consumption estimates. It is methodologically very difficult to detect different amounts of care given to close-age males and females sharing the same household. Overall, then, the estimates of sex differences in care consumption must be considered a lower bound.

To be more specific about the regression method for imputing consumption, a regression equation is estimated for each potential care producer (that is, for each household member who was asked to fill out the time-use survey questionnaire) and for each type of direct care as follows:

\[ X_j = \sum_a \sum_s \alpha(a, s)E_j(a, s) + \varepsilon_j \]

where \( X_j \) is the amount of a particular type of direct care time produced by survey respondent \( j \), \( E_j(a, s) \) is the number of members age \( a \) and sex \( s \) in the household of the survey respondent where those household members are “enrolled” in the care target age group, which means they are in that age group. Age \( a \) is grouped in 2-year groups to reduce noise. The regression coefficients pick up the extent to which more care of a particular type is produced in households that have more members in a particular age/sex group. The positive \( \alpha(a, s) \) coefficients that come out of the regression are then assigned to the relevant age groups and used as weights to distribute the producer’s time produced to household members as consumption.

For time caring for persons outside of the household, the production is imputed as consumed by all persons in the target population, using the age profile of consumption of care provided to household members as weights. In effect, it is assumed that care provided by non-household members is consumed in the same relative amounts as when care is provided by co-resident household members.

Once all of the production is imputed to consumers, producing the age- and sex- profiles is a matter of taking the age- and sex-specific average amounts of the persons in the time-use survey. The sex-specific consumption schedules are smoothed by age just as for the production schedules.
1.3 The necessity of household structure data

In the previous section, the imputation of consumption of unpaid care work was shown to lean heavily on household structure. For some time-use survey data, this is not an issue because the survey takers also collected the complete roster of household members by age and sex.

However, in other cases, the full household roster may not be available. This is the case for Bangladesh and Thailand in the set of countries included in this study. For those, an alternate source of household structure data was used: census samples available from the IPUMS International Database (Minnesota Population Center, 2018).

These samples provide complete listings of household members by age and sex which can be combined with the time-use data on production of unpaid care work activities. The combining is done by identifying as many matching variables in the time-use survey and census sample as possible – age, sex, household size, relationship to household head, marital status, education and any other variable which is asked in a similar enough way between the two data sources to be a match. The average amount of production of unpaid care work activities is calculated from the time-use survey in cells defined by all categories of the matching variables and then imputed onto individuals in the census sample with the same categories of the matching variables. This puts the time-use production estimates for Bangladesh and Thailand into a context where the full household roster is available and makes it possible to estimate consumption of unpaid care work time. An alternative method would be to “hot deck” the imputation, but that is less necessary in this case because the focus here is on average production and consumption and there is no need to preserve data on the degree of variability of unpaid care work around the average production estimates.

1.4 Estimating time transfers in National Time Transfer Accounts

In estimating time transfers, the simplifying assumption is being made that unpaid care work time is consumed at the same time it is produced, therefore total production of unpaid care work time must equal its total consumption and no net transfers are possible. This is true for the population as a whole, but not for any individual or group compared to the population. To estimate transfers, the analysis distinguishes between indirect and direct care.

For direct care, all production is consumed by others, so the transfer outflow of direct unpaid care work equals the production and the transfer inflow of direct unpaid care work.

The author wishes to acknowledge the statistical offices that provided the underlying data included in IPUMS International for making this research possible: Bangladesh Bureau of Statistics, Bangladesh; and National Statistical Office, Thailand.
For indirect care activities like general housework, a producer does transfer all of their own production of indirect unpaid care work but rather consumes some of it herself, because the assumption is made that all indirect unpaid care work benefits all individuals in the household equally. The transfer outflow is therefore the portion of the production the producer does not consume themself, and the transfer inflow is the portion consumed that the producer did not produce themself.

1.5 Further analyses possible with microdata

Thus far, producing sex-specific age schedules of the production and consumption of unpaid care work has been discussed. These age schedules will be compared with similar schedules of time spent in paid work, to demonstrate the scale of the “invisible economy” of care relative to that of the more commonly measured market economy. While there is much to discuss in the age- and sex-specific production and consumption averages, at the same time these marginal views obscure much rich data. With estimates of production, consumption and transfers as part of a complete household roster, not just the average of who worked and who consumed can be seen, but also the complete matrix of who, by age and sex, provided care for whom.

These matrices can be estimated and plotted with 3D or “temperature” points to show the care system in a given country. They reveal how much intergenerational care transfers there are between grandparents and grandchildren, or adult children and frail elderly parents. They also show the extent to which older persons are providing care for other older persons, and whether that pattern has specific gender dimensions.

2. Projection techniques

2.1 Basic scenario, “only population age structure changes”

Once the empirical facts of the current unpaid care economy are grounded, projections are made to analyse how this situation may shift in the future. One way to do that is with the thought experiment “what if the care economy stayed as it is currently in terms of the average production and consumption by age and sex, but the numbers of people in those categories changed?” This is a straightforward calculation holding the NTTP production and consumption estimates constant while using a population projection into the future to change the population age and sex structure.

The population projections come from the United Nations World Population Prospects database (DESA, 2017a) and the “medium variant” projection is used. The estimated population at 2015 is the starting point and the population by age and sex is projected to 2100. These projections continue the trajectory of population ageing for most countries, with continuing gradual mortality decline and longer lives, and continuing gradual fertility decline for countries with above replacement fertility levels, and gradual fertility increases to replacement level for
countries with below-replacement fertility. In the sample of six countries used in this paper, all start the projection period in 2015 with at or above replacement fertility except Thailand, which starts below replacement. Thus, all countries but Thailand are projected to have gradual fertility declines over the period, and Thailand has a slight increase.

The calculation described above, weighting per capita unpaid care work demand and supply curves by changing populations, creates an unpaid care work support ratio. These types of support ratios are a more empirically informed version of dependency ratios which are just ratios of population age groups. Support ratios have been used extensively to understand the impact of population ageing on the market economy by the NTA project (DESA, 2017b), and suggested for the care economy as well, in other versions (Robine et al., 2007).

Specifically, the calculation for the unpaid care work support ratio in year $y$ ($UCWSR_y$) is as follows:

$$UCWSR_y = \frac{\sum_a \sum_s UCWP(a,s) N(a,s,y)}{\sum_a \sum_s UCWC(a,s) N(a,s,y)}$$

where $N(a,s,y)$ is the projected population count of persons age $a$, sex $s$, in year $y$ from the UN WPP database, $UCWP(a,s)$ is the average amount of time produced by persons age $a$, sex $s$ as estimated using the NTTA methodology for the most recent year available for a particular country and $UCWC(a,s)$ is the average amount of time consumed by persons age $a$, sex $s$ also estimated as in the NTTA methods, for the most recent year available.

The UCWSR is basically a ratio of projected aggregates of production and consumption of unpaid care work, used to represent a future look at supply relative to demand. If the age groups that supply and demand care shift in the future, the market may be out of balance. If there is more projected demand than supply, there may not be enough care available for those in need. If the opposite arises, then time in the future may be freed up for other uses than providing care.

These basic projections are done at different levels, including only care for older persons, or only direct care, or all types of care combined. Each analysis reveals a different aspect of the care economy which may face demographic pressure in the future.

2.2. Care scenarios in which children consume more care

The “only population changes” projection scenario keeps the per-child consumption of care fixed. In many population projections where the base of the population age structure continues to shrink relative to the older ages, this means that childcare demands grow more slowly than childcare production, potentially freeing time from childcare that could be used to provide care to a growing share of older persons.
This scenario may be overly optimistic, however, because of the evidence of the quantity-quality tradeoff in situations of lower fertility. It can be observed that lower fertility populations, both across countries and when one country’s fertility falls over time, tend to invest more in each child so that the total investment in all children is fairly constant but that each child receives more care. To evaluate this potential effect on the future, a scenario based on constant per-child consumption of care is projected to analyse to what extent it exacerbates any imbalance in the demand and supply in the unpaid care economy.

Other scenarios are certainly possible to imagine, given the tools created in this work. Future research may consider scenarios of changing disability status of older persons, changing participation in paid work or changing policies on pensions, retirement and support for market or family caregiving.
Annex II: Data

Bangladesh
Time-use survey data from Bangladesh are from the Bangladesh Pilot Time Use Survey of 2012, conducted by the Bangladesh Bureau of Statistics. The author wishes to thank colleagues from the National Transfer Accounts/Counting Women’s Work research team at the University of Dhaka for sharing their estimates.

Details on the survey are available here:

This survey is a 24-hour time diary survey, coded using the 2003 version of the International Classification of Activities for Time Use Statistics. The full coding scheme is available in Annex 21 of the Guide to Producing Statistics on Time Use: Measuring Paid and Unpaid Work (United Nations Department of Social and Economic Affairs, 2005), which can be accessed here:


Codes (from survey dataset variable “act5”) included in activity groups are:

- Market work: 1111-5900
- Indirect care (general housework): 6111-6900
- Direct care for household children: 7111,7112,7113,7114
- Direct care for household adults: 7121,7122,7123
- Direct care for household others (includes age not specified): 7200,7900
- Direct care, volunteering: 8000-8999, except 8116 and 8117
- Direct care for non-household children: 8116
- Direct care for non-household adults: 8117

India
Time-use survey data are from India’s Pilot Time Use Survey, conducted in 1998-1999 by the Ministry of Statistics and Programme Implementation (MOSPI). They include data from six states (Haryana, Madhya Pradesh, Gujarat, Orissa, Tamil Nadu and Meghalaya). The author wishes to thank colleagues from the National Transfer Accounts/Counting Women’s Work research team at the International Institute for Population Sciences for sharing their estimates.

Details on the survey can be accessed here:
http://mail.mospi.gov.in/index.php/catalog/130

This survey is a 24-hour time diary survey, coded using a scheme developed for the survey.
Codes (from survey documentation) included in activity groups are:

- Market work: 111-329, 892
- Indirect care (general housework): 411,421,431,441,461,471,481,491
- Direct care for household children: 511,521,531,561,571
- Direct care for household adults: 541,551,562,572
- Direct care for household others (includes age not specified): 591
- Direct care, volunteering: 611-691
- Direct care for non-household children: not available
- Direct care for non-household adults: not available
- Direct care for non-household members: 581

Because codes for non-household children and adults were not available separately, they were grouped into a single set of activities and their consumption was distributed proportionally to the household adults and household children age profiles.

**Mongolia**

Time-use survey data from Mongolia are from the Mongolian Time Use Survey of 2015, conducted by the National Statistical Office (NSO) of Mongolia.

Data are freely available online and data and details on the survey can be accessed here: [http://web.nso.mn/nada/index.php/catalog/108](http://web.nso.mn/nada/index.php/catalog/108)

This survey is a 24-hour time diary survey, coded using an early version of the International Classification of Activities for Time Use Statistics (ICATUS). While the ICATUS has been updated since Mongolia began conducting time-use surveys, it has continued to use this version. A report on a previous survey, with the coding used in that survey and the 2015 version can be accessed here:


Codes included (from variable “activity code”) in activity groups are:

- Market work: 0-199
- Indirect care (general housework): 211-299
- Direct care for household children: 311-319
- Direct care for household adults: 321-339
- Direct care for household others (mainly travel related to care): 380, 390
- Direct care, volunteering: 411-499, except 416 and 417
- Direct care for non-household children: 416
- Direct care for non-household adults: 417
Thailand
Time-use survey data from Thailand are from the Thailand Time Use Survey of 2014, conducted by the National Statistical Office of Thailand. Details on the survey can be accessed here: http://web.nso.go.th/eng/stat/timeuse/time_use.htm

This survey is a 24-hour time diary survey, coded using an adapted version of the 1997 International Classification of Activities for Time Use Statistics, which is very similar to the version used in Bangladesh. The full coding scheme is available in Annex 21 of the Guide to Producing Statistics on Time Use: Measuring Paid and Unpaid Work (United Nations Department of Social and Economic Affairs, 2005), which can be accessed here: https://www.un.org/development/desa/capacity-development/tools/tool/guide-to-producing-statistics-on-time-use-measuring-paid-and-unpaid-work/

Codes (from survey dataset variable “ICATUS_A”) included in activity groups are:
- Market work: gen paidwk= 1111-5999
- Indirect care (general housework): hwk= 6000-6999
- Direct care for household children: 7111,7112,7113,7114
- Direct care for household adults: 7121,7122,7123
- Direct care for household others (includes age not specified): 7200,7900
- Direct care, volunteering: 8000-8999, except 8116 and 8117
- Direct care for non-household children: 8116
- Direct care for non-household adults: 8117

Turkey
Completed estimates for Turkey are included courtesy of the National Transfer Accounts/Counting Women’s Work research team and were calculated using the same methodology. Details on the Counting Women’s Work project can be accessed here: www.countingwomenswork.org.

Viet Nam
Completed estimates for Viet Nam are included courtesy of the National Transfer Accounts/Counting Women’s Work research team and were calculated using the same methodology. Details on the Counting Women’s Work project can be accessed here: www.countingwomenswork.org.
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