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Vanessa Loh and Hal Kendig

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Vanessa Loh[1, 2] and Hal Kendig[2, 3]

[1]Ageing, Work and Health Research Unit, Faculty of Health Sciences, University of Sydney
[2]ARC Centre of Excellence in Population Ageing Research (CEPAR)
[3]Centre for Research on Ageing, Health and Wellbeing, Australian National University

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Abstract

An uncertain economic outlook and the certitude of an ageing population highlight the importance of productivity across all age groups for Australia's future. This paper provides national findings on both paid, tax-generating and unpaid, voluntary productivity across the life course, focusing primarily on the baby boomer cohort now in late middle age. Findings from Wave 10 (2010) of the Household, Income and Labour Dynamics in Australia (HILDA) Survey are presented showing productive activities including paid work, volunteering, caregiving, childcare, and domestic work. The results indicate that the kinds of productivity vary across age groups for men and women, the potential competition between paid work and other activities, and the importance of health and education for productivity across all ages. The findings reinforce the value of investment in human capital for productivity across the lifespan inclusive of middle and late life. The Government can lead action to enhance and recognise these contributions that benefit the social standing and well being of ageing individuals as well as bring economic and social benefits to the broader community.

Keywords: social contributions, ageing workforce, human capital, productivity, caregiving

Introduction

The Government's Intergenerational Reports (IGRs), most recently by the Australian Treasury (2010), highlight concerns that population ageing is increasing costs to government and reducing workforce supply. The IGRs provide fiscal projections for the Commonwealth government, but their portrayal in the media has fueled public perceptions that the 'doomsday' or 'tsunami' of population ageing is threatening the wellbeing of younger people into the future. Related research by the Australian Institute of Health and Welfare (AIHW; Jenkins et al. 2003) and the National Centre for Social and Economic Modelling (NATSEM; Nepal et al. 2011a), present the projected care needs of an ageing population and projected shortfalls of informal caregivers. Demographic ageing, increasing longevity, and continuing economic uncertainty have also generated intense concern for the sustainability of retirement income systems and care systems in developed and developing countries around the world (OECD 2006, 2011).

A balanced approach to understanding older people is important for developing a constructive response to demographic change, whilst maintaining their dignity and social standing. Constructive views have been presented by National Seniors Australia (NSA 2009) and the Treasury's Advisory Panel on the Economic Potential of Senior Australians (EPSA; Treasury 2011). These reports highlight the importance of recognising, enabling and assisting Australians to continue productive contributions as they age. However, there has been limited research outside these commissioned reports containing population trends and projections specifically for

older age groups. Prior research examining the contributions of older individuals has typically not presented corresponding data on younger age groups nor on the context of modifiable factors such as health and education, which can enable or constrain one's productive contributions. Opportunities and necessities to make contributions can depend on an individuals' physical and mental health capacities, their motivations and skills, their family and community context, competing pressures on time use, and the structural incentives and constraints imposed by employment markets and public policies. This paper takes a first step towards addressing these issues, using data collected in the 2010 HILDA Survey.

The main objective of the present study is to provide a recent analysis of engagement in both paid and unpaid productive activities among working-aged Australians, before looking more closely at the older baby boomer cohort. The data were collected a few years after the shock of the 2007/2008 Global Financial Crisis (GFC), which generated some instability in employment and concerns for standards of living, but these impacts were relatively less significant in Australia than in Europe and North America (Kendig et al. in press). Comparative data for younger age groups is presented to provide a cross-sectional indication of productive engagement across the life course. The results are disaggregated by key demographic and human capital factors that have previously been associated with productive engagement including gender, health and education, income, occupation and marital status. The paper concludes with a discussion of research directions and policy actions that could enable productivity in mid and later life.

Human capital and productive ageing

The concept of human capital provides a useful framework for the present study and its relevance is highlighted by the Australian government's key interest in improving human capital (Shomos 2010). Within this framework, human capital is viewed as a resource such as health, education, and social support, which when invested in and improved, yields broader economic benefits that extend beyond individuals to the society as a whole. Specifically, the human capital literature has shown that improvements in education, training and health increase wages and labour market productivity (Nepal et al. 2011b; McDonald 2010; Shomos 2010).

The concept of productive ageing emerged in the United States in the 1980s, largely as a positive reaction against the dominant, ageist view of ageing as a process of declining physical and cognitive health and functioning, resulting in increased dependency and dwindling contributions (O'Reilly & Caro 1994). The problem with this dominant view is that it devalued older people, failing to acknowledge their ongoing contributions and potential for productive engagement in a range of activities, not only in paid work. In contrast, the concept of productive ageing recognises that individuals can and often do continue their engagement in activities that have socioeconomic value within their social context, as they age.

The global significance of ageing well and ageing productively has been brought back to attention by three major worldwide trends. First, the demographic trend of people living longer, healthier lives is expected to lead to increasingly larger proportions of older people living well into their 70s, 80s and 90s with the capacity to continue their engagement in society and useful contributions (Morrow-Howell et al. 2001a). Second, there has been a corresponding sociocultural trend in which people have been showing less inclination to retire from the paid workforce in the more traditional sense, with many choosing to (if possible) remain active and continue productive activities (Morrow-Howell et al. 2001a). Third, the global trend of economic uncertainty emphasizes the importance of productivity for all age groups across the lifespan. While the United States has experienced recent rises of unemployment among older people, the main effect of the GFC in Australia appears to have been to encourage some delays in planned retirement and adjustments to lower expenditure for those reliant on investment returns for retirement income (Kendig et al. in press).

Although the meaning of productive ageing can vary greatly across different cultures and social contexts, productive ageing may be defined as the engagement of older people in activities that produce, or develop the capacity to produce, goods or services that are either paid for or unpaid, but otherwise would have to be paid for (Bass & Caro 2001; O'Reilly & Caro 1994). Productive activities can include paid work, volunteering, caregiving, other informal help to family and friends, self-maintenance, and further education and training (Kendig & Browning 2010; Morrow-Howell et al. 2001a).

This does not mean that the alternative to productive ageing or activities is *unproductive* ageing or activities (Morrow-Howell et al. 2001b; Walker 2008). Rather, Morrow-Howell and colleagues (2001b, p. 286) suggest that productive ageing should be viewed as one of several goals that one may wish to pursue in later life, and different individuals may have different goals for later life, all of which have value. Thus, although productive ageing can have real and immediate economic value to the broader community, it is not an ultimate goal that should be imposed on all people. Public policy should aim to promote and support or enable productive ageing as an option for those who wish to continue productive activities in later life.

Prior research

With the exception of a few published studies, the majority of prior research on productive ageing has been conducted within the United States. As Hinterlong (2008) noted, research on productive ageing has been limited in part by the lack of consensus about which activities constitute productive activities. Not surprisingly, there has been more research on older adults' participation in the paid workforce than on less formalised, typically unpaid activities that are more difficult to measure such as volunteering, caregiving, and domestic work or informal help

to others. Even less attention has been paid to individual-level productive activities such as self-care or self-maintenance, education and training.

In an early overview of productive ageing, O'Reilly and Caro (1994) identified the need to take into account how institutional or environmental barriers such as pension eligibility restrictions, corporate recruitment, training and promotion policies and practices, and negative age-related stereotypes, might affect individual's decision-making regarding work and retirement in later life. They also noted significant gender differences with a greater proportion of women experiencing conflicts between paid work and unpaid productive activities such as domestic work, childrearing, caregiving, and volunteering. In terms of volunteering, O'Reilly and Caro (1994) reported that the percentage (20-30%) of individuals engaged in volunteering remained relatively stable from the mid-20s until the mid-60s, with significant decreases after age 75, likely due to declining health, which limits or constrains engagement in later life. Educational level, overall activity level and life satisfaction were also identified as predictors of volunteering. Although gender was not generally a strong predictor of volunteering, women tended to volunteer more than men in later life, and also tended to give more time.

In terms of caregiving, O'Reilly and Caro (1994) found that childcare occupied only a minor amount of time with most caregiving involving caring for a spouse or parent. As with volunteering, women, particularly those who are middle-aged and older, are more likely to be involved in caregiving, which significantly impacts their involvement in paid work and other activities. O'Reilly and Caro (1994) noted that stronger public and private sector interventions are required to better support informal caregiving activities, and to increase the number of opportunities for older individuals to engage in other productive activities that they might wish to engage in. The recent governmental reports prepared by the Australian EPSA (Treasury 2011) makes similar recommendations to those in O'Reilly and Caro's (1994) American review published 17 years earlier.

Hinterlong (2008) provides a more recent review of American research prior to 2006 citing evidence that the majority of older individuals were involved in at least one productive activity, with a significant proportion of them involved in multiple activities. Following 1,644 Americans aged 60 and over in 1986 from the Americans' Changing Lives Study (ACL) for three waves (1986, 1989, 1994), Hinterlong (2008) found that whilst 74% of respondents engaged in one or more productive activities at each wave, individuals varied significantly in the amount of time spent on each activity with individual variability increasing and mean time decreasing over time. Of those not engaged in any activity at wave one, 44% had died by wave three, about 30% remained non-engaged, with the remainder engaged in a later wave.

Using a relatively young cross-sectional sample of 3,581 Canadians aged 45 and older from Statistics Canada's 1998 General Social Survey, Dosman and colleagues (2006) examined

engagement in productive activities and daily time allocation by gender and work status. They found that in addition to spending more time on leisure activities than their still-employed counterparts, retirees also spent more time in self-care and unpaid productive work (domestic work, caregiving, and volunteering), and a small percentage (4 to 6%) of retirees still spent on average four hours per day in paid work. They also found that more retired men than employed men were engaged in volunteering and domestic work, with retired men also spending more time than employed men in domestic work. Whilst fewer retired women than employed women were engaged in caregiving, of those engaged, retired women spent more time caregiving than employed women.

In a study of 458 Spanish adults aged 55 to 75 with good mental and physical functioning, Fernández-Ballesteros and colleagues (2011) reported that women spent significantly more time performing productive activities than men, but this was largely due to women spending more time in domestic work. In addition, they found that retirees spent more time on productive activities outside of paid work, than non-retirees.

Using time diary data from 1,350 individuals not in the workforce and aged 55 years and over in the 1997 Australian Time Use Survey (TUS), Brandon and Temple (2006) found that 42 percent of older Australians spread their time across personal care, housework, recreation, socialising, volunteering, caregiving, and childcare activities. They also found that being female, younger, widowed, more highly educated, and having lower rates of disability increased the likelihood of being involved in volunteering and caring activities in addition to personal care, housework and recreation. These results provide early Australian evidence that personal, social and health factors such as gender, educational attainment and health or disability status enable or constrain one's capacity to engage in multiple productive activities beyond the household, and that the majority of those engaged in activities beyond the household were participating in activities that not only benefited themselves, but also benefited others in community.

The literature suggests that with health permitting, the majority of older individuals are likely to continue engagement in a range of productive activities as they age, although the extent of engagement will likely vary greatly between individuals, particularly as they age. For example, using data from the 2004 Survey of Health, Ageing and Retirement in Europe (SHARE), Erlinghagen and Hank (2006) found that being older (75 years or more compared with 50 to 64 years), having lower levels of education and poorer health reduced the likelihood of individual engagement in volunteer work.

Paid work has been the most extensively researched area of productive ageing (e.g., McDonald 2011), although there has been increasing research on volunteering, caregiving, childcare and domestic work (e.g., McMunn et al. 2009; Tang et al. 2010). Much of the research on the contributions of individuals typically focuses on only one or two productive activities. For

example, McDonald (2011) presents useful data on the labour force participation of Australians aged 55 years and up, whilst Bittman and colleagues (2007) examine how caregiving participation impacts the labour force participation of Australians aged 15-64 years.

The literature also notes the potential competition or time trade-off between different productive activities, the most obvious of which is likely to be between paid work and other productive activities. For example, Erlinghagen and Hank (2006) found that relative to those who had retired, workers were less likely to be concurrently engaged in volunteer work. In contrast, being involved in productive activities such as being an informal helper or carer, increased the likelihood of engagement in volunteer work. Using a much smaller American sample, Tang and colleagues (2010) found that the top two reasons for stopping volunteer work were commitments to other productive activities including paid work, caregiving or other volunteering programs, and declining health.

In an earlier analysis of data from the HILDA Survey Waves 1 to 4 (2001 to 2004), Bittman and colleagues (2007) found that amongst those initially in full-time work, the likelihood of moving to either part-time or no work was greater amongst carers than non-carers. In addition, amongst those initially not in the labour force, carers were much less likely than non-carers to begin either full-time or part-time work. For younger age groups, there will also likely be competition between involvement in childcare and paid work. For example, Baxter and colleagues' (2007) Australian Institute of Family Studies (AIFS) facts sheet showed that both men and women with dependent children felt more time pressure than those without, and time spent with pre-school children on weekdays generally decreased with greater working hours.

In summary, engagement in each productive activity is expected to vary by age and gender, according to dominant, social and cultural expectations of ageing and gender roles in Australia. Important demographic indicators such as health, education, income, occupation and marital status are also likely to affect engagement in different productive activities across the life course. Consistent with the human capital literature, having more resources, as indicated by higher levels of health and education are likely to be related to increased engagement in productive activities such as paid work. The extent that having greater human capital or resources affects engagement in productive activities other than paid work is less clear. For instance, because of the potential competition between paid work and other activities, and the positive association between paid work and human capital, it is possible that there might actually be a negative link between higher resources and other productive activities.

In light of the existing literature and given that resources accumulate throughout the life course, factors such as household income, occupation and marital status, are likely to influence the extent of engagement in productive activities as individuals age (Brandon & Temple 2006). The present study will begin addressing these issues in the Australian context by first examining a

broader array of productive activities beyond paid work, then disaggregating results across all working age groups by gender, health and education, and finally focusing on those aged 45 and over and the effects of household income, occupation and marital status.

Method

Data and sample

The data were obtained from Wave 10 (2010) of the Household, Income and Labour Dynamics in Australia (HILDA) Survey. HILDA is a nationally representative household panel survey conducted annually since 2001 with an initial Wave 1 sample of 7,682 households (66% response rate), comprising 19,914 individuals. Within households, only the 15,127 individuals aged 15 years and over were eligible for personal interviews, resulting in a Wave 1 sample of 13,969 eligible individuals (92% response rate). At each wave, the sample is extended to include new household members following changes in household composition, household members turning 15 years of age, and non-responding Wave 1 household members who decide to participate in a later wave. Attrition rates across waves are comparable to similar surveys internationally (Melbourne Institute of Applied Economic and Social Research 2011). Further details of the sample and survey methodology have been reported elsewhere (Watson & Wooden 2002).

Wave 10 included data from 13,526 individuals aged 15 to 93. Of these, 12,048 (89%) returned their Self-Completion Questionnaires, which contains the time-use questions examined in this paper. The final sample comprised 10,131 individuals with complete age, gender, health, educational level and time-use data.

Measures and analysis

Demographic variables including age, gender, health, educational level, household income, occupation, and marital status were obtained in the personal interview, whilst time spent on productive activities was obtained from the Self-Completion Questionnaire (SCQ). In the SCQ, respondents reported the number of hours they would spend in a typical week doing paid work, household errands, housework, outdoor tasks, looking after one's own children, looking after other people's children, volunteering, and caring for a disabled or elderly relative.

Prior research (e.g., Van der Meer 2006) has often combined childcare with caregiving to adults or with other forms of instrumental support assisting others including housework and household errands. However, given the possibility that caring for one's own children, caring for other people's children, and caring for a disabled or elderly relative are likely to show different patterns of engagement over the lifespan, we kept these three types of caregiving separate.

Time spent on household errands, housework and outdoor tasks were summed to form a single domestic work variable. Engagement in each activity was then computed as a dichotomous measure with zero hours spent on an activity indicating non-involvement and more than zero hours indicating engagement.

To provide a relatively informative yet succinct snapshot of how gender, health and education relate to productive activities over the life span, respondents were divided into 10-year age groups from 15-24 years of age to 75 years and over. To maximize both sample sizes and information when examining the relationship between productive engagement and household income, occupation, and marital status specifically for the baby boomer cohort, only respondents aged 45 to 64 were included and divided into 5-year age groups.

Given that health is viewed as a potential enabler or resource for productive contributions, a measure of health status over the longer-term was used instead of subjective health ratings, which are more prone to short-term fluctuations based on one's current health status. Respondents who indicated they did not have any long-term health condition, impairment or disability that restricts them in their everyday activities were classified as having good health, whilst those who did were classified as having a long-term health condition. Consistent with prior research (e.g., McDonald 2011), three levels of education were used: no post-school qualification, post-school qualification, and university degree.

Separate chi-square tests were run for each productive activity with age group and gender, health, education, income, occupation or marital status entered as independent or control variables.

Results

Of the 10,131 wave 10 respondents, 47.3% were female, 62.8% were either married or in a de facto relationship and 40.4% had one or more dependent children. Almost a quarter (22.8%) of respondents had a degree qualification, a further 30.7% had a non-degree qualification, while the remaining 46.5% had no post-school qualification. In terms of age, 19.5% of respondents were aged between 15 and 24, 15.6% aged between 25 and 34, 16.6% aged between 35 and 44, 17.6% aged between 45 and 54, 14.1% aged between 55 and 64, 9.8% aged between 65 and 74, and the remaining 6.8% were aged 75 years and over.

The percentage of respondents engaged in each productive activity and the mean time spent amongst those engaged in each activity are presented in Table 1. Almost all respondents are engaged in domestic work (97.6%), 62.8% are engaged in paid work, a third spend time caring for their own child or children, about a fifth (20.3%) do volunteer or charity work, 12.0% care for other's children and 9.3% care for a disabled or elderly adult family member. Amongst those who indicated engagement in an activity, the most time was spent in paid work (35.9 hours per

week), followed by domestic work (19.4 hours per week), caring for one's own children (18.1 hours per week), and adult caregiving (16.1 hours per week).

[Table 1 around here]

The bottom third of Table 2 shows engagement disaggregated by age group only. With the exception of the youngest 15-24 year age group, who have the highest engagement in part-time work (34.4%), engagement in full-time work tends to be lower for older age groups, and there is a clear decrease for the 55-64 and 65-74 year-olds relative to the next youngest age group. Engagement in part-time work drops markedly for the 25-34 and 65-74 year-olds relative to the next youngest age group.

[Table 2 around here]

Not surprisingly, engagement in own childcare is relatively high for those aged 25-54, and is highest amongst 35-44 year-olds (74.6%), whereas engagement in other childcare is generally higher for older age groups, and is highest amongst 55-64 year-olds (17.8%). Volunteering and caregiving show similar trends to engagement in other childcare, but volunteering is highest amongst 65-74 year-olds (31.9%). Finally, given that engagement in domestic work remains relatively high (above 90%) across all categories of age, gender, health, education, household income, occupation and marital status, it is excluded from further analysis to save space and avoid redundancy.

Age and gender

With the exception of the youngest and oldest age groups, males and females have different rates of engagement in all productive activities over the life course (Table 2). The most obvious difference is in paid work starting with the 25-34 year age group, where 91.4% of males compared to 73.7% of females are engaged in paid work, and engagement in full-time work is lower for females than males, whilst engagement in part-time work is generally higher.

Interestingly, engagement in own childcare is higher for females than for males only until the 45-54 year age group, when engagement is higher for males than for females, possibly due to men having children at later ages than women. Consistent with expectations, females generally had higher rates of engagement than males in other childcare and volunteering, and were also more engaged in caregiving for adult relatives from ages 35 to 64.

Age and health

The data in Table 3 suggest markedly different rates of productive engagement across all ages between those with a long-term health condition and those with good health. With the exception of caring for adult relatives and other's children, engagement rates were generally higher for those with good health than those with a long-term health condition. Consistent with the human

capital literature, the most notable difference is the generally higher engagement in paid work, particularly in full-time paid work, for those with good health compared to those with a long-term health condition across all age groups. The relatively higher engagement in volunteering of those over 65 years with good health compared to those with a long-term health condition highlights the importance of health for engagement, particularly at older ages.

[Table 3 around here]

Good health is related to higher engagement in own childcare amongst those aged 25-54, whereas health is related to engagement in other childcare only for the youngest and oldest age groups. Specifically, 15-24 year-olds with good health are less engaged in other childcare than those with a long-term health condition, whilst those over 75 years with good health have higher engagement than those with poorer health. Finally, engagement in adult caregiving is higher for those with poorer health than those with good health, except amongst 15-24 year-olds and those over 65, where those with good health have similar rates of engagement.

Age and education

Consistent with the literature on human capital, Table 4 shows that higher levels of education tend to be associated with greater engagement in paid work (either full-time or part-time) and volunteering across the life course. Those with higher education generally had lower engagement in own childcare in younger age groups, but higher engagement in older age groups compared to those with lower educational qualifications. A similar pattern was observed for engagement in other childcare and caregiving across the age groups, although the associations with education were generally not significant.

[Table 4 around here]

Age and income

Table 5 presents engagement rates disaggregated by household income tertiles for the baby boomer cohort aged 45-64 years in 2010. Having a higher household income is generally associated with higher engagement in full-time paid work, but lower engagement in part-time paid work, suggesting that full-time rather than part-time work is strongly related to household income. Higher incomes are also associated with higher engagement in own childcare, but lower engagement in other childcare and adult caregiving across all age groups. Higher incomes appear to be related to higher engagement in volunteering, but these relationships were not significant.

[Table 5 around here]

Age and occupation

The engagement rates for different occupational groups are displayed in Table 6. Across age groups, occupational group is related to engagement in paid work, own childcare, volunteering and caregiving. Managers and professionals generally have the highest engagement in full-time paid work and own childcare and the lowest engagement in part-time work. Conversely, clerical and sales workers generally have the lowest engagement in full-time paid work and own childcare and the highest engagement in part-time work.

[Table 6 around here]

Both for volunteering and caregiving, managers, professionals, clerical and sales workers generally have higher engagement, whilst machinery operators and labourers generally have lower engagement. Trades and community workers have similarly low engagement in the 45-49 and 50-54 year age groups but engagement is generally higher in the two older age groups. Occupational group was not related to other childcare.

Age and partner status

As seen in Table 7, those married or in a de facto relationship generally have higher engagement in paid work (full-time and part-time), childcare (own and other), and volunteering than those with no partner, although engagement is similar in the 60-64 year age group. The results also suggest no significant relationship between marital status and adult caregiving.

[Table 7 around here]

Discussion

The present study was based on a secondary analysis of recent data from working-age and older Australians in the nationally representative HILDA Survey, collected in 2010, a few years after the economic and employment turmoil of 2007/2008. The findings update and extend previous findings from Australia and elsewhere that individuals continue engagement in productive activities as they age over the life course. The extent and ways in which people contribute was found to vary depending on age and gender, as well as their social positions and personal resources that can either enable or constrain their capacities and opportunities.

Overall, the findings are generally consistent with prior research on age- and gender-related expectations and opportunities within the Australian context and can be interpreted within a life course perspective (e.g., Elder, 1995). In this perspective, one's life course or developmental trajectory is said to be shaped by past and present age-, gender- and other socially-graded expectations, institutions and norms within their particular cultural context (Moen 1996; Moen & Spencer 2006). For example, engagement in part-time work is highest amongst 15-24 year-olds, whilst engagement in full-time work is highest for 25-34 year-olds, and engagement in own childcare is highest for 35-44 year-olds. The middle 45-54 year age group has relatively high

engagement in all productive activities, whilst 55-64 year-olds have the highest engagement in caring for other's children and adult caregiving. Of all the activities excluding domestic work, which show engagement rates above 90% for all age groups, the 65-74 year-olds and those aged over 65 have highest engagement in volunteering. The pattern suggested by this constructed life course is that Australians aged 15 years and over are likely to begin their contributions to paid work part-time, when they are also likely to be studying, before entering the workforce more fully for a period of time before having their own children. In the older age groups, the contributions shift from paid work and caring for one's own children towards caring for other people's children, adult relatives and volunteering or charity work.

The influence of gender expectations and opportunities was also supported by the results. Consistent with gender expectations for work, childrearing and caregiving, men have relatively higher engagement than women in paid work, particularly in full-time paid work, and generally lower engagement in part-time paid work and other types of activities beyond paid work. The results also suggest a possible consequence is men having children at relatively older ages than women.

Consistent with the human capital literature, the results highlight the potential for health and education to enable or constrain the types of activities individuals engage in across the life course. Those with long-term health conditions and lower educational qualifications generally had lower engagement than those with good health in all activities other than caring for other's children and adult relatives, two activities that are more likely to occur within one's home or place of residence. These activities are also more likely to be unpaid, raising questions about related issues of social disadvantage and social exclusion that affect engagement in productive activities across the life course (McDonald 2010).

Focusing on the baby boomer cohort aged 45-64 in 2010, the data suggest that household income, education and marital status are related to different patterns of engagement. Being married or in a de facto relationship is related to higher engagement in all activities other than adult caregiving, which is unrelated to marital status. Higher household incomes are generally associated with higher engagement in full-time paid work and own childcare, but lower engagement in part-time work and caring for other's children or adult relatives. In terms of occupation, managers and professionals have relatively high engagement in all activities other than caring for other's children, which was not significantly related to occupational group. In contrast, machinery operators and labourers tended to have lower engagement in all activities. Clerical and sales workers, and trades and community workers also have lower engagement in full-time work, but relatively high engagement in part-time work. Interestingly, clerical and sales workers across all ages, but only trades and community workers aged over 55, also have relatively high engagement in volunteering and adult caregiving.

Limitations and future directions

In interpreting the findings it is important to recognise that age differences reflect cohort influences as well as life course influences. For example, the educational background and gender expectations as well as employment markets for those currently in early adulthood are considerably different from those experienced by people now in middle and later life. Longitudinal analyses are required to understand the impacts of earlier experiences on the life course and life transitions such as entries to and exits from paid work and other productive activities (e.g., Baxter et al. 2008).

Our future research will extend these findings by examining transitions over time using several waves of the HILDA Survey. In addition, analyses of time use information will provide a better indication of the actual time spent on productive activities as well as trade-offs between them in allocating scarce time. Future multivariate analyses will test the relative importance and interactions among enabling and constraining influences on activities as well as the consequences for health and wellbeing when people have multiple, demanding responsibilities such as full time work and caregiving. Future research may also examine other potential determinants such as household structure, number of dependent children, attitudes towards productive engagement, and levels of social capital.

Conclusions and policy implications

The findings of the present study highlight the significant role of social and demographic factors in enabling or constraining engagement in productive activities over the life course and as individuals age. Despite the cross-sectional nature of the data limiting our ability to draw causal conclusions, these findings can inform government and social policies designed to improve the wellbeing of individuals as they age and their ability to age productively. Following concerns that governments will be unable to continue providing adequate pension and healthcare support for an ageing population as the proportion of those working decreases, governments have begun implementing strategies including raising pension eligibility ages, increasing mandatory retirement savings, and addressing barriers such as age discrimination to further encourage and better enable older individuals to remain in the paid workforce longer (Ryan 2012; Griffin et al. 2012; OECD 2006).

The Government's third IGR (Treasury 2010) concludes that maintaining the workforce and increasing productivity are priorities for Australia in responding to the future challenges of economic uncertainty and population ageing. The appointment of the first Age Discrimination Commissioner to the Australian Human Rights Commission in 2011 provided national leadership in addressing pervasive ageism that undermines the recognition and contributions of older people in the wider community as well as in the workforce. The Government Response to the Final Report of the EPSA in April 2012 accepted recommendations for actions in key areas

including active ageing, volunteering, and age discrimination, outlining a number of important initiatives now underway that have prospects for constructively enabling more contributions by ageing and older people (Treasury 2012). According to COTA (2012), the most important is the 10 year Plan on Positive Ageing, which '... provides an opportunity to develop a comprehensive approach across all aspects of economic and social life to ensure older people are able to participate fully as citizens and members of society' (p. 2).

Our findings also underscore the importance of valuing people across all age groups in terms of their broader contributions beyond tax-generating economic productivity. This is particularly pertinent for older people given that many have reduced engagement in paid work but increased engagement in unpaid work, and governments are preoccupied by age-related costs particularly for health and income support. NSA (2009) has estimated that the monetary value of unpaid volunteering, childcare and caregiving work by older Australians amounted to approximately $6.8 billion a year. Recognition of these contributions provides an important counterpoint to generational attacks that scapegoat older people for the costs of population ageing, with adverse effects on their social standing and self-esteem (Kendig 2010). Moreover, the Australian response to the GFC of older workers delaying retirement and staying in the paid workforce longer (Kendig et al. in press, O'Loughlin et al. 2010), highlights the importance of enabling ageing individuals to contribute to the sustainability of ageing populations.

There is great value in current policies aimed at increasing human capital. Improving education, health, employment opportunities, and the removal of barriers in accessing these opportunities can increase people's capacities for both paid and unpaid contributions across all ages. The National Research Priority[1] of 'Promoting and maintaining good health' and the associated priority goals of 'ageing well, ageing productively' and helping '…families and individuals live healthy, productive, and fulfilling lives' underscore the importance of enabling individuals from a variety of backgrounds to continue productive engagement, if they wish to, well into later life. Ongoing investments enabling people across the life course to remain healthy and to have economic security are sound investments in the future and will be crucial for an increasingly active, engaged, and vital older population.

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Endnotes

1. National Research Priorities: http://www.innovation.gov.au/Research/Documents/AustraliasNationalResearchPriorities.pdf

Table 1: Percentage of respondents and mean time spent by those engaged in each productive activity

	Percentage engaged	Mean hours per week
Paid work	62.8	35.9 (15.4)
Volunteer or charity work	20.3	5.0 (6.8)
Adult caregiving	9.3	16.1 (26.0)
Own childcare	33.3	18.1 (19.9)
Other childcare	12.0	7.4 (11.1)
Domestic work	97.6	19.4 (16.6)

Note: Standard deviations in parentheses.

Table 2: Percentage engaged in each productive activity by age and gender

	Paid work		Childcare		Volunteering	Caregiving	Domestic
	FT	PT	Own	Other			work
Females (n = 5341)							
15-24	25.3	40.0	11.0	11.9	11.2	2.7	94.1
25-34	46.3	27.4	48.6	11.7	16.5	2.7	99.8
35-44	35.4	36.5	78.2	16.8	26.6	9.8	99.1
45-54	39.1	36.6	43.6	12.3	25.0	18.8	99.6
55-64	25.2	22.9	10.2	21.7	26.8	21.3	99.3
65-74	1.8	7.5	5.9	18.8	34.9	11.7	98.8
75 and over	0.0	2.6	2.1	5.5	21.7	9.2	94.2
Males (n = 4790)							
15-24	37.6	28.0	8.7	7.7	9.8	3.1	90.8
25-34	83.7	7.8	40.2	7.5	11.0	3.5	98.9
35-44	85.9	4.9	70.4	11.1	17.5	5.2	99.0
45-54	79.1	8.0	59.0	8.4	20.8	12.3	99.1
55-64	51.3	16.7	20.4	13.4	25.4	13.6	99.3
65-74	5.7	8.8	7.4	11.9	28.9	10.5	98.6
75 and over	0.3	3.3	4.0	5.3	22.2	11.3	94.7
All (n = 10,131)							
15-24	31.1	34.4	10.0	9.9	10.6	2.9	92.6
25-34	63.7	18.3	44.7	9.7	14.0	3.1	99.4
35-44	59.2	21.6	74.6	14.1	22.3	7.6	99.1
45-54	58.5	22.7	51.1	10.4	23.0	15.6	99.3
55-64	37.6	19.9	15.0	17.8	26.1	17.6	99.3
65-74	3.7	8.2	6.6	15.4	31.9	11.1	98.7
75 and over	0.1	2.9	2.9	5.4	21.9	10.1	94.4

N = 10,131. FT= Full-time (35 hours or more in a typical week); PT = Part-time.

Table 3: Percentage engaged in each productive activity by age and health

	Paid work		Childcare		Volunteering	Caregiving
	Full-time	Part-time	Own	Other		
Long-term health condition (n = 2720)						
15-24	23.3	29.6	10.9	16.7	12.8	3.9
25-34	44.3	23.5	37.7	12.6	13.7	8.7
35-44	42.9	20.7	65.8	14.4	18.8	14.1
45-54	36.6	20.9	42.3	11.9	19.7	18.6
55-64	24.8	16.0	13.7	19.2	24.8	18.8
65-74	2.1	5.5	6.9	13.7	25.5	11.2
75 and over	0.0	2.1	2.5	3.2	17.5	9.6
Good health (n = 7411)						
15-24	32.2	35.1	9.8	8.9	10.2	2.7
25-34	66.2	17.6	45.6	9.4	14.0	2.4
35-44	63.0	21.8	76.6	14.0	23.1	6.1
45-54	66.5	23.4	54.3	9.9	24.2	14.5
55-64	46.2	22.6	15.9	16.8	27.0	16.8
65-74	5.2	10.6	6.4	17.0	37.8	11.0
75 and over	0.4	4.5	3.7	9.4	29.8	11.0

N = 10,131. Full-time paid work refers to 35 hours or more paid work per week.

Table 4: Percentage engaged in each productive activity by age and education

	Paid work		Childcare		Volunteering	Caregiving
	Full-time	Part-time	Own	Other		
Degree (n = 2311)						
15-24	72.3	16.8	1.0	5.0	13.9	1.0
25-34	69.1	18.9	32.5	8.2	16.8	2.6
35-44	62.8	25.5	75.5	13.7	28.0	4.8
45-54	66.1	22.1	59.4	7.8	33.9	18.9
55-64	44.5	25.8	21.6	16.8	34.5	19.3
65-74	6.8	14.9	6.2	17.4	47.8	12.4
75 and over	1.4	11.1	12.5	11.1	33.3	12.5
Non-degree post-school qualification (n = 3106)						
15-24	56.9	24.9	18.5	9.4	7.1	4.4
25-34	62.9	20.6	52.2	11.8	13.8	3.3
35-44	64.6	18.5	75.5	13.3	20.0	9.2
45-54	61.6	22.9	50.1	11.8	20.6	14.3
55-64	43.5	18.5	13.8	16.3	25.5	15.9
65-74	3.7	7.6	5.2	15.6	31.5	13.5
75 and over	0.0	2.2	1.7	3.4	23.0	5.6
No post-school qualification (n = 4714)						
15-24	23.6	37.3	8.9	10.3	11.0	2.7
25-34	57.8	14.7	51.1	9.3	10.6	3.5
35-44	49.6	21.1	72.6	15.4	19.1	8.6
45-54	48.4	22.9	45.2	11.0	16.5	14.5
55-64	28.9	17.6	12.1	19.5	21.6	18.0
65-74	2.8	6.3	7.7	14.7	27.1	9.1
75 and over	0.0	1.8	1.8	5.3	19.6	11.5

N = 10,131. Full-time paid work refers to 35 hours or more paid work per week.

Table 5: Percentage engaged in each productive activity by age and household income

	Paid work		Childcare		Volunteering	Caregiving
	Full-time	Part-time	Own	Other		
Under $60,000 (n = 1018)						
45-49	35.9	25.2	51.3	12.0	23.9	22.2
50-54	28.2	24.1	27.7	14.4	15.9	19.5
55-59	17.9	21.4	12.7	18.3	23.1	21.0
60-64	13.6	19.2	10.0	18.6	28.1	17.5
$60,000 - $124,999 (n = 1200)						
45-49	65.8	21.9	57.0	11.7	22.8	12.0
50-54	59.7	24.6	42.9	11.8	20.2	14.8
55-59	57.8	20.4	20.4	18.3	25.6	17.0
60-64	34.5	24.6	7.9	17.7	24.6	16.3
$125,000 and over (n = 917)						
45-49	71.2	23.0	69.0	8.6	29.1	10.7
50-54	75.0	18.9	51.1	5.0	23.2	17.9
55-59	69.8	15.6	28.1	15.1	27.1	19.1
60-64	51.8	17.9	12.5	20.5	29.5	12.5

N = 3,135. Full-time paid work refers to 35 hours or more paid work per week. Household income was divided into tertiles according to gross income band for the last financial year.

Table 6: Percentage engaged in each productive activity by age and occupation

	Paid work		Childcare		Volunteering	Caregiving
	Full-time	Part-time	Own	Other		
Managers and professionals (n = 991)						
45-49	78.0	20.1	64.4	10.8	31.9	13.6
50-54	75.0	20.9	49.3	6.8	28.4	20.3
55-59	78.4	18.8	28.6	11.3	30.5	21.1
60-64	48.4	39.6	11.3	14.5	25.8	14.5
Trades and community workers (n = 482)						
45-49	67.7	30.6	64.5	9.1	18.8	15.1
50-54	70.4	28.2	40.1	12.7	10.6	12.0
55-59	57.0	36.6	23.7	22.6	24.7	20.4
60-64	57.4	31.1	11.5	11.5	29.5	11.5
Clerical and sales workers (n = 531)						
45-49	62.5	35.6	52.5	8.1	25.6	10.6
50-54	58.1	35.6	38.8	10.0	21.9	18.1
55-59	63.8	29.9	11.8	18.1	22.0	18.1
60-64	51.2	40.5	4.8	17.9	25.0	22.6
Machinery operators and labourers (n = 347)						
45-49	63.5	27.8	57.4	12.2	17.4	8.7
50-54	66.3	28.7	50.5	12.9	11.9	10.9
55-59	63.8	28.8	22.5	15.0	13.8	8.8
60-64	51.0	39.2	13.7	7.8	9.8	15.7

N = 2,351. Full-time paid work refers to 35 hours or more paid work per week.

Table 7: Percentage engaged in each productive activity by age and marital status

	Paid work		Childcare		Volunteering	Caregiving
	Full-time	Part-time	Own	Other		
Married or de facto (n = 2391)						
45-49	60.8	25.0	67.3	10.4	27.5	13.6
50-54	59.1	24.0	46.8	10.8	22.3	16.7
55-59	49.9	20.4	21.3	19.8	27.4	19.5
60-64	27.3	20.1	9.1	19.9	26.9	16.8
No partner (n = 812)						
45-49	57.7	17.0	38.2	11.6	19.9	15.8
50-54	50.0	18.2	27.3	8.2	14.5	18.6
55-59	43.2	15.9	15.3	8.5	18.8	18.2
60-64	23.4	22.3	12.6	14.3	27.4	13.7

N = 3,203. Full-time paid work refers to 35 hours or more paid work per week.