

The role of social connectedness in the process of retirement

Pilar Rioseco
(Maria Pilar Rioseco Lopez)

A thesis submitted for the degree of Doctor of Philosophy
of The Australian National University

December 2015

Declaration

Except where otherwise indicated, this thesis is my own original work carried out during my PhD study at the Australian National University.

A handwritten signature in blue ink, reading "M. Pilar Rioseco Lopez". The signature is written in a cursive, flowing style.

Maria Pilar Rioseco Lopez

December 2015

Acknowledgements

First I would like to thank the continuous support and guidance provided by my supervisor and panel chair Associate Professor Heather Booth throughout my candidature. Her constructive criticism and constant challenge helped me to improve my research significantly, as well as to develop my analytical thinking and writing skills. Heather always went the extra mile to support me at various stages of my studies and was always flexible with my personal circumstances. Her feedback at every stage (design, analysis, interpretation) was crucial for the successful completion of my research project.

I would also like to thank the assistance that I received from my advisor Dr. Tim Windsor. Tim, as well as Heather, provided feedback on all of my seminars, conference presentations, posters and thesis drafts. In addition, Tim provided valuable advice in terms of methodology and statistics. Tim's thorough and timely comments on my thesis drafts were very important for improving my thesis and the further development of my argument.

In addition, I would like to thank my advisor Hal Kendig for providing valuable insights on how to improve previous drafts. Finally, I would like to thank the feedback received from my supervisor Associate Professor Robert Ackland.

I would also like to thank other academics in the Australian Demographic & Social Research Institute for their help with various aspects of my research (advice with methods, feedback on drafts, letters of reference, etc.). Thanks to Ann Evans, Ariane Utomo and Peter McDonald.

My candidature would have not been possible without the financial support provided by an Australian Postgraduate Award (Industry) scholarship – through the Social Networks and Ageing Project (SNAP) – which was the main source of funding during my studies. The SNAP project was funded by an ARC Linkage grant -LP0990974 "The role of online social networks in successful ageing: benefiting from 'who you know' at older ages" (H. Booth, R. Ackland and T. Windsor; 2009-2012) in collaboration with National Seniors Australia Productive Ageing Centre. In addition, I received a supplementary scholarship from the Australian Research Council Centre of Excellence in Population Ageing Research (CEPAR).

I would like to thank my friends at ADSRI for the many productive discussions that we had over the years, as well as the good times; particularly to Cuc and Nerida in the ‘ageing’ group. I would also like to thank Nerida and Shelby for providing shelter in Canberra when I needed it. A special thanks goes to my family and friends who patiently read parts of my thesis (Erin, Lachlan, Sanja, Nerida, Cheryl, Ted, Steve, Jack, Tess and Anne-Marie) and provided hours of childcare (Tess, Steve and Kelsey), and to my family in Chile – especially mamá and papá – for always being proud of my achievements. I also need to acknowledge my officemate and friend Suharti for her kindness, for providing delicious Indonesian food, for introducing me to Indonesian culture and the Ukelele, and for being an inspiration, professionally and personally. Finally, I would like to thank my husband for his support and encouragement – and my baby for his patience – during this journey.

This thesis uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the author and should not be attributed to either FaHCSIA or the Melbourne Institute.

This thesis includes data drawn from the *Social Activity and Wellbeing of Older Australians* survey which is part of the Social Networks and Ageing Project (SNAP). This study is funded by an ARC Linkage grant (LP0990974 "The role of online social networks in successful ageing: benefiting from 'who you know' at older ages" (H. Booth, R. Ackland and T. Windsor; 2009-2012) in collaboration with National Seniors Australia Productive Ageing Centre. The findings and views reported in this paper are those of the author and not those of the supporting agencies.

Table of Contents

Abstract	xi
1. Introduction: Retirement and social connectedness	1
2. Retirement in Australia: Policies, trends, and context	8
2.1. Retirement policy in Australia	8
2.2. Trends in labour force participation of older workers and retirement	11
2.3. Constraints in retirement decisions and labour force participation.....	16
3. Retirement and social connectedness: review of the literature and theoretical approaches	20
3.1. Social connectedness and the process of retirement	20
3.1.1. Definition of social connectedness	20
3.1.2. Age differences and age-related change in social connectedness.....	22
3.1.3. Phases in the process of retirement	23
3.1.4. The association between social connectedness and retirement.....	24
3.2. Factors associated with retirement transitions	28
3.2.1. Demographic factors	28
3.2.2. Financial circumstances	30
3.2.3. Health	31
3.2.4. Education	32
3.2.5. Employment characteristics	33
3.3. Research gap, conceptual framework and research questions	35
3.3.1. Theoretical approaches of this study.....	36
3.3.2. Conceptual framework.....	40
3.3.3. Research questions and hypotheses	45
4. Data and methods	48
4.1. Data	48
4.1.1. SNAP survey.....	48
Measures of social connectedness.....	49
Control variables: ‘past history’ and ‘current circumstances’	52

Control variables: ‘expectations’	53
Data limitations	53
4.1.2. HILDA	54
Measures of social connectedness.....	54
Control variables ‘past history’ and ‘current circumstances’	56
Data limitations	57
4.2. Methods of analysis	57
4.2.1. SNAP	57
4.2.2. HILDA	59
4.3. Comparison of data sources	61
5. Social connectedness and retirement planning	63
5.1. Data and methods.....	64
5.2. Results multiple regression models subjective time to retirement by sex	69
5.3. Discussion	75
6. Social connectedness and retirement status.....	86
6.1. Data and methods.....	87
6.2. Descriptive analysis: bivariate associations between social connectedness and retirement status by sex and age group	90
6.3. Multiple regression analysis.....	93
6.3.1. Multiple regression models retirement status by sex.....	95
6.3.2. Multiple regression models retirement status by age group	98
6.4. Discussion	101
7. Dynamics of social connectedness and the process of retirement	110
7.1. Trajectories of social connectedness and retirement status over time: worker, retiree and worker who retired	111
7.1.1. Data and methods.....	112
7.1.2. Results	114
7.2. Change in social connectedness during the process of retirement.....	122
7.2.1. Data and methods.....	122
7.2.2. Results	123

7.3. Discussion	127
8. Social connectedness and the process of retirement	136
8.1. Discussion of main findings.....	139
8.2. Limitations and future research.....	147
8.3. Implications.....	153
8.4. Conclusion	161
References	162
Appendix 1. Reasons to retire included in SNAP questionnaire	186
Appendix 2. Additional multiple regression subjective time to retirement females.	187
Appendix 3. Regression coefficients significant models Section 7.2	188
Appendix 4. Conference presentations based on this study.....	190

List of tables and figures

Figure 1. Examples of policy changes to the Australian retirement income system	9
Figure 2. Labour force participation of males (left) and females (right) aged 55 and over 1980 - 2010	12
Figure 3. Labour force participation 1980-2010 by age group	13
Figure 4. Conceptual framework	41
Figure 5. Original data structure showing two individuals (ID = 1 and ID = 2).....	60
Figure 6. Modified data structure showing two individuals (ID = 1 and ID = 2).....	60
Table 1. Descriptive statistics control variables and subjective life expectancy	65
Figure 7. Subjective time to retirement by age for males and females	66
Table 2. Importance of reasons to retire for future retirement decision (% rated ‘important’)	67
Table 3. Descriptive statistics social connectedness variables.....	69
Figure 8. Predicted values for subjective time to retirement by age (50 – 70) for males and females (based on Model 3)	71
Table 4. Subjective time to retirement regression models males.....	72
Table 5. Subjective time to retirement regression models females.....	74
Figure 9. Interaction effect frequency of negative exchanges family and work arrangements females (predicted values)	75
Table 6. Descriptive statistics by sex	88
Table 7. Descriptive statistics by age group.....	89
Table 8. Bivariate associations social connectedness and retirement status by sex.....	91
Table 9. Bivariate associations social connectedness and retirement status by age group	92
Table 10. Logistic regression retirement status males	96
Table 11. Logistic regression retirements status females.....	97
Table 12. Logistic regression retirement status by age group Model 1: control variables	99
Table 13. Logistic regression retirement status by age group Model 2: social connectedness.....	100
Table 14. Sample characteristics.....	113
Table 15. Random coefficient regression models network structure: frequency of social activities with family and friends males and females	115
Figure 10. Interaction effect time and retirement status males (upper panel) and females (lower panel): frequency of social activities with family and friends.....	116
Table 16. Random coefficient regression models formal social engagement: hours of voluntary work males and females.....	117
Figure 11. Interaction effect time and retirement status males: hours of voluntary work	118
Table 17. Random coefficient regression models network quality: satisfaction with relationship with partner males and females	119
Table 18. Random coefficient regression models network quality: satisfaction with relationship with children males and females	119

Table 19. Random coefficient regression models social support: quality of support males and females	120
Table 20. Random coefficient regression models social support: availability of support males and females	121
Figure 12. Network structure: predicted values of frequency of social activities with family and friends males (left) and females (right).....	125
Figure 13. Formal social engagement: predicted values of hours of voluntary work males (left) and females (right).....	125
Figure 14. Network quality: predicted values of satisfaction with relationship with partner males (left) and females (right).....	125
Figure 15. Networks quality: predicted values of satisfaction with relationship with children males (left) and females (right).....	126
Figure 16. Social support: predicted values of quality of support males (left) and females (right).....	126
Figure 17. Social support: predicted values of availability of support males (left) and females (right).....	126
Table 21. Multiple regression subjective time to retirement females: interaction effect between work arrangements and negative social exchanges	187
Table 22. Fixed effects coefficients for time: frequency of social activities with family and friends males and females	188
Table 23. Fixed effects coefficients for time: hours of voluntary work males and females	188
Table 24. Fixed effects coefficients for time: satisfaction with relationship with children males and females	189

Abstract

Research on retirement assumes increasing importance in the context of population ageing. Most studies have investigated the financial, health and employment-related factors associated with retirement decisions, though some studies have included spouse and family characteristics.

Research has consistently shown that social connectedness has benefits for health and well-being in older adulthood. However, little research has addressed the relationship between aspects of social connectedness (network structure, network quality, social support and formal social engagement) and the different phases in the process of retirement, including retirement planning, retirement status and life in retirement. This is the aim of this thesis.

The conceptual framework for this study posits a trade-off between work and social connectedness. Extending Carstensen's socioemotional selectivity theory, it is hypothesised that the value of social connectedness increases as subjective remaining time in life becomes more limited, motivating older adults to retire. Adopting a life course perspective, it is proposed that current levels of social connectedness stem from having built (or not) meaningful networks over the life course and that current level determines the impact of social connectedness on retirement and how much change occurs in social connectedness after retirement.

Therefore, in the context of a trade-off between work and connectedness and a more limited future time perspective at older ages, it was expected that older adults who have built higher levels of connectedness over their life course would be more likely to plan an earlier retirement and retire earlier. However, based on Antonucci and Akiyama's convoy model of social relationships and Atchley's retirement phases, it was simultaneously expected that the process of retirement would influence older adults' social connectedness.

Two data sources are analysed. Cross-sectional analysis of the 2010-2011 national Social Networks and Ageing Project (SNAP) survey provided detailed information on older adults' social connectedness. Analysis of the Household, Income and Labour Dynamics in Australia (HILDA) provided a longitudinal component (waves 1 to 11, collected 2001-2011).

Consistent with the concept of gendered life course, analysis shows that the role of social connectedness in the process of retirement varies by sex and the aspect of social connectedness in question. For males, there is evidence of productive role replacement between paid work and voluntary work, and a ‘honeymoon’ effect was observed regarding network structure. Results for males suggest a significant impact of the process of retirement on social connectedness. In contrast, social connectedness acts as a ‘pull’ factor for females to move into retirement. This was observed in terms of both network structure and social support. The findings for females provide evidence for a trade-off mechanism between work and social connectedness.

This thesis has contributed to knowledge by showing that social connectedness plays a significant role in the process of retirement. Thus, future research on retirement should incorporate the different aspects of social connectedness in order to provide a more comprehensive understanding of this important social transition. Policies directed at prolonging working lives should take into account the social connectedness characteristics and behaviour of the older population.

1. Introduction: Retirement and social connectedness

Retirement from work is one of the most important life course transitions of older adulthood. In the context of population ageing in most developed countries, greater numbers of older adults will be spending a longer time in retirement. For this reason, interest in retirement decisions has increased. Although the process of retirement has been widely studied, previous research has mostly focused on individual factors such as socio-demographic characteristics, financial security, health status, and employment characteristics. In addition, research on the consequences of retirement has also focused mainly on financial aspects, health and subjective well-being. Little research has explored the association between the process of retirement and elements beyond the individual. However, individuals are social and are part of a social network, and social networks have a significant impact on health and well-being (e.g., Berkman, Glass, Brissette, & Seeman, 2000). Therefore, the study of this important life course transition would be considerably enhanced if individuals' social relations were taken into account. The aim of this study is to identify the role of social connectedness indicators in predicting retirement planning and its association with retirement status, and to investigate trajectories of social connectedness over the different phases of the process of retirement.

Social connectedness is an overarching term used in this thesis to refer to social networks and social engagement. Social networks are defined as the web of social relationships that surround an individual and the characteristics of those ties (Berkman et al., 2000). Social networks are generally understood in terms of structure, quality and function. The structure of the social network is usually defined by the number of people in the network and the level of contact an individual has with the network members. Quality of the network refers to the positive and negative social exchanges that an individual experiences with the members of his or her network. Social support is defined as a function of the social network and refers mainly to the emotional and instrumental support provided by the network members. Social engagement, in turn, results "from the enactment of potential ties in real-life activity" (Berkman et al., 2000, p. 849). That is to say, social activities with network members or formal social participation are a means for acquiring a sense of coherence, meaning and interdependence (Berkman et al., 2000).

Retirement can be defined in a number of ways. In the past, when most workers had long full-time career jobs and exited the labour force abruptly and definitely retirement was experienced by older workers as a one-off exit. However, changes in the dynamics of the labour market and the abolition of mandatory retirement have influenced the patterns of labour force participation of young and older adults. Pathways to retirement are becoming more diverse (De Vaus, Wells, Kending, & Quine, 2007; Warren, 2008). Consequently, retirement varies significantly across individuals. Even if retirement happens as a one-off event, retirement is better understood as a process which involves retirement planning, the decision to retire and life in retirement. The process of retirement starts long before actual decisions about how to exit the labour force are made (Ekerdt, 2004). Planning for retirement occurs once the possibility of exiting the labour force comes closer. This is considered the pre-retirement phase (Atchley & Barusch, 2004). Retirement planning is an important aspect of the process of retirement and involves elements such as formal and informal planning, financial planning and setting goals for retirement (Wang & Shultz, 2010). This stage begins with distal preparation in which older workers start to think about what retirement may involve and start to discuss it with people around them before initiating the actual decision-making once retirement comes closer (Shultz & Wang, 2011).

Borland (2005) has defined the transition to retirement as representing “a phase where an individual shifts from one relatively permanent or regular pattern of labour market activity to another pattern; and this change in pattern should involve a decrease in hours of work or the extent of engagement in paid work to a very low level” (p.3). Although retirement can be defined in a number of ways, and this may vary across individuals (e.g., receiving a pension, leaving a career job, reducing working hours), in this thesis ‘being retired’ is defined as having left the paid labour force completely. That is to say, people are considered to be retired if they are not doing any paid work. This approach was chosen in order to identify significant changes in older adults’ daily routine and activities.

The process of retirement does not end when workers finally exit the workforce permanently. Post-retirement adjustment is also considered an important part of the process, which involves leisure activities, retirement satisfaction, and physical and psychological well-being (Wang & Shultz, 2010). Atchley and Barusch (2004) described a number of phases that people may go through when adjusting to life in retirement. These authors suggest that during the retirement phase – that is, once older

workers exit the labour force completely – three patterns of activities may be observed: honeymoon, retirement routine and rest and relaxation. Some people may experience a phase of disenchantment after a period of honeymoon or rest and relaxation, which can be marked by disappointment or uncertainty. A phase of reorientation may follow, in which people look for a satisfying retirement lifestyle that could involve community participation, new hobbies, etc. Establishing a comfortable and rewarding retirement routine is the next phase outlined by Atchley and Barusch (2004), which is described as the goal of retirement. How long it may take for people to achieve a retirement routine can vary greatly across individuals, and once it is achieved it may last many years, until retirement is no longer a relevant role for older people.

Research has consistently shown that network structure, social support, network quality, and social engagement have important implications for older adults' physical and mental health, psychological well-being and survival (e.g., Booth, Rioseco, & Crawford, in press; Bowling & Grundy, 1998; Fiori & Jager, 2012; Litwin & Shiovitz-Ezra, 2011). However, little research has attempted to understand the interaction between multiple aspects of social connectedness and the different phases in the process of retirement. Few studies have examined the association between retirement and social connectedness, and most of these studies have focused on one or two elements of the association. Szinovacz and colleagues have established the importance of marital quality on retirement transitions, showing that males and females in better quality marriages are more likely to retire (e.g., Szinovacz & DeViney, 2000). Similarly, they observed that lack of family ties can result in delayed retirement (Szinovacz, DeViney, & Davey, 2001). In a study of early retirement, Elovainio and colleagues (2003) found that women who have retired early reported low social support and women in the labour force who reported low social support had a lower preference for early retirement. Regarding retirement status, long-term retirees have been found to report less quantitative support than full-time workers, but change in labour force status did not have an effect on quantitative support during the observation period. This same pattern was observed for support in general as well as for support from co-worker friendships (Bossé, Aldwin, Levenson, Spiro, & Mroczek, 1993). Research in this area suggests that having good quality relationships and adequate social support are likely to encourage retirement, whereas the lack of these may discourage retirement. In addition, the literature suggests that retirees and workers differ in their social connectedness, but it is not clear when in the transition these differences emerge and only a few areas of social connectedness have been explored (mainly marital status, marital quality, having

children and frequency of contact with children. e.g., Szinovacz & DeViney, 2000; Szinovacz et al., 2001). Regarding formal social engagement, a number of studies have examined the association between voluntary work and retirement. Findings suggest that paid work limits participation in voluntary work (Moen & Flood, 2013) and exiting the labour force increases voluntary work participation (Mutchler, Burr, & Caro, 2003). However, others have shown that formal social engagement delays retirement timing (Lancee & Radl, 2012).

No studies to date, however, have incorporated simultaneously multiple aspects of social connectedness (including network structure, social support, network quality, and formal social engagement) and different types of networks (such as family, friends and formal groups) in the study of the process of retirement, including retirement planning, retirement status and transition from work to retirement.

The association between social connectedness and retirement can be understood in the context of a constant trade-off between work and leisure (Lancee & Radl, 2012). At older ages, it is expected that the value of leisure will increase as time remaining in life becomes more limited. This concept is explained by socioemotional selectivity theory (Carstensen 1993, 2006). Socioemotional selectivity theory states that as people get older, time is perceived as more limited. This results in a change in social motivation, shifting the focus away from future-oriented goals, and towards enhancing the quality of emotional experiences in the present. Extending on this framework, it could be expected that older adults will start to focus more on fostering close personal relationships as they get older, which may increase their motivation to retire, so that less time is spent at work and more time is spent with close friends and family or in other meaningful activities.

In addition to socioemotional selectivity theory, a life course perspective is adopted in this thesis. Life course approaches highlight the importance of processes and transitions – not just events – and the significance of past experiences in shaping present circumstances (e.g., Elder, 1994). Taking this approach, it is proposed that current levels of social connectedness stem from having built (or not) meaningful networks over the life course and that current level determines the impact of social connectedness on retirement and how much change occurs in social connectedness after retirement.

Therefore, in the context of a trade-off between work and relationships and a more limited future time perspective at older ages, it is expected that having built strong

social connectedness over the life course will become a motivation to retire. In particular, it is expected that older adults with higher levels of connectedness will be more likely to plan an earlier retirement and will be more likely to be retired. However, a bi-directional relationship between the process of retirement and social connectedness can also be expected. Consequently, change in social connectedness can be expected throughout the phases of the process of retirement.

Sex is a defining aspect of people's life courses (Kim & Moen, 2002; Moen, 1996) and retirement can be understood as a gendered life course transition (Moen, 2001). In the context of sex differences in social connectedness (e.g., Antonucci & Akiyama, 1987a) and different labour force participation patterns of males and females (e.g., Han & Moen, 1999; Jefferson, 2009), sex differences in the association of social connectedness with the process of retirement are expected.

This thesis uses two data sources in order to investigate complementary elements of the association between retirement and social connectedness. First, the Social Networks and Ageing Project (SNAP) survey is analysed. This study was designed to explore Australian older adults' social networks and social engagement, in relation to successful ageing. As a result, this dataset provides substantial detail on multiple aspects of social connectedness that is typically not available in existing datasets. The second data source used in this thesis is the Household, Income and Labour Dynamics in Australia (HILDA) survey. This is a household panel representative of the Australian population which started in 2001. Eleven waves (data are collected annually) of HILDA were available for this research. The strength of this data source is its longitudinal nature, which allows exploring transitions in retirement status over time. However, because it is a household panel not designed to study either the older population or people's social networks, the information on social connectedness is general. Analysing these two different datasets allows for a more comprehensive understanding of the phenomenon under study than what either of these individual datasets could provide. A number of different analytical techniques are used to examine the association between social connectedness and the process of retirement. In addition, multiple aspects of social connectedness, such as network structure, network quality, social support, and formal social engagement, are investigated in relation to different phases of the process of retirement: planning, status and transition. It is expected that the use of a variety of methods – outlined in Chapter 4 – will facilitate a better understanding of the

interrelation between retirement and social connectedness. It is not within the scope of this thesis to establish causal models.

This thesis has eight chapters. Chapter 2 explores the phenomenon of retirement in Australia, including the evolution of superannuation and pension policies, trends in retirement and labour force participation of older workers and the context and constraints where retirement occurs.

Chapter 3 presents a review of the literature. The first section of this chapter defines relevant concepts of social connectedness and explains the phases of the retirement process. Then, it discusses the limited existing literature linking social connectedness and retirement. The second section of Chapter 3 reviews studies on the factors associated with retirement, including demographic and financial aspects, health, education, and job characteristics. The third section first identifies the gap in the literature that this study aims to, at least partially, fulfil. Then, it discusses the theoretical approaches used in this thesis to understand the association between social connectedness and the retirement process. Lastly, the conceptual framework for this thesis and the research questions are presented.

Chapter 4 describes the two datasets used in this thesis: SNAP and HILDA. The dependent and independent variables used in the analysis of SNAP and HILDA are defined here. After defining the variables, the statistical techniques used to answer the research questions are explained. The chapter concludes by outlining the limitations of the data and comparing the strengths and weaknesses of each dataset.

Chapter 5 addresses the role of social connectedness on retirement planning using SNAP data. Multiple regression analyses are conducted separately for males and females to identify the influence of social connectedness indicators on subjective time to retirement. It is expected that higher levels of connectedness will lead to a shorter subjective time to retirement. It is also expected that social connectedness will play a more important role for females' than males' retirement planning.

Chapter 6 uses SNAP to first explore differences in indicators of social connectedness between retirees and non-retirees. This analysis is conducted separately for males and females, and also across four age groups (50-59, 60-64, 65-69 and 70 and over). Then, logistic regression analyses are conducted to identify significant associations between social connectedness indicators and the likelihood of being retired while controlling for covariates. These models are conducted separately for males, females and across the

four age groups (50-59, 60-64, 65-69 and 70 and over). It is expected that higher levels of social connectedness will be associated with a higher probability of being retired. Differences in significant associations for males and females and across the four age groups are examined and discussed.

Chapter 7 examines changes in social connectedness indicators over time using HILDA. First, trajectories of social connectedness are explored across the phases of the retirement process: pre-retirement (those still working), retirement (those who have already left the labour force), and transition from pre-retirement to retirement (workers who retired during the observation period). The second part examines a sub-sample of HILDA respondents who were observed three waves before retirement, at the time of retirement, and three waves after retirement. Individual-level trajectories of social connectedness throughout the phases of the retirement process are observed.

Chapter 8 brings together the main findings of chapters 5, 6, and 7. The findings are discussed in the context of existing literature and the theoretical approaches used in this thesis. In addition, limitations, future research, and implications of this study are discussed in this chapter.

This thesis seeks to expand our understanding of retirement and social connectedness by incorporating a number of indicators of social connectedness which have been found important for older adults' health and well-being into the study of the process of retirement. In addition, this thesis adds to current knowledge by using several methodological approaches in order to cover multiple and complementary aspects of this relationship.

This study contributes to the field by drawing attention to a topic that has been scarcely researched and is potentially very important in understanding the process of retirement and individual differences in retirement transitions, beyond traditional models of retirement focused mainly on individual-level factors. In addition, social connectedness and the transition to retirement have important implications for ageing well. This thesis will provide an overview of the association between different aspects of social connectedness and the different phases in the retirement process, and will open the discussion for future research to continue incorporating social connectedness in the study of the process of retirement.

2. Retirement in Australia: Policies, trends, and context

This chapter provides an overview of the context in which retirement occurs in Australia and presents trends in labour force participation of older adults and retirement. First, the evolution of retirement policies is outlined, in order to provide a synopsis of changes in retirement policies and set the policy context in which retirement transitions occur in Australia. Second, trends in labour force participation by older males and females in Australia are presented, together with national statistics about retirement transitions. Finally, the chapter discusses the main constraints that older workers face in Australia in terms of labour force participation and retirement decisions. All of these elements are important in understanding how older adults experience retirement and they describe the policy context for the association between social connectedness and retirement.

2.1.Retirement policy in Australia

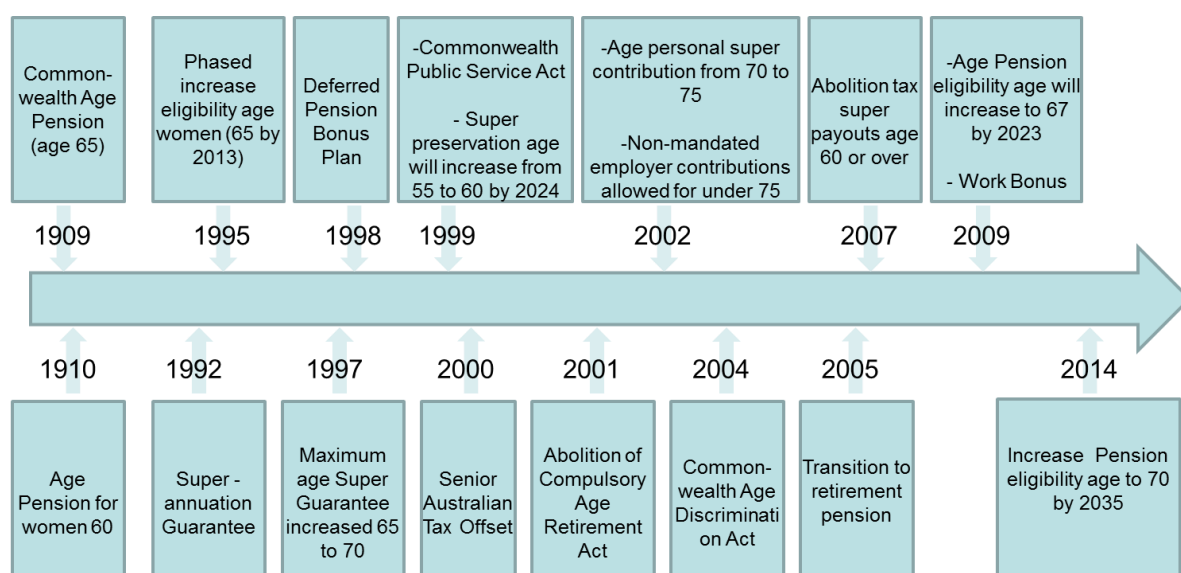
The Australian retirement income system consists of three pillars: the means-tested Age Pension, compulsory employer superannuation contributions and private savings (Commonwealth of Australia, 2004).

The Age Pension was first established in Australia in 1909. Since then, a number of policy changes have been applied to the Age Pension and superannuation. Figure 1 provides a summary of relevant policy changes that have occurred and some that will take place in the future. Almost immediately after the setting of the Age Pension eligibility age at 65 for both men and women, it was changed in 1910 to 60 for women. From this time until the early 1990s, most of the changes in Age Pension policy were focused on the means test threshold and calculation of people's wealth. In 1992, a major change was introduced with the Superannuation Guarantee, which introduced compulsory superannuation payments for all Australian employees, paid for by employers. The introduction of the Superannuation Guarantee was a big step in the direction of self-funded retirement, aiming to provide private retirement savings to the majority of the workforce.

A few decades ago, older adults were not expected to live a long time in retirement and policies were directed at promoting early retirement of older workers, so that more

opportunities would be available for younger workers. In addition, many older workers were affected by adjustments to the structure of the labour market, precipitating their early retirement (Jackson, Walter, Felmingham, & Spinaze, 2006). The rapid ageing of the population has changed the way governments see retirement and the retirement income system. Policies that were focused on promoting early retirement started to change towards retaining and increasing participation of older workers in most industrialised countries (Taylor, Tillsley, Beausoleil, Wilson, & Walker, 2000). The financial viability of the Age Pension in the context of population ageing has motivated governments to undertake multiple reforms to the retirement income system. In Australia, the Treasury's Intergenerational Report has outlined a number of proposed measures to decrease government expenditure on the Age Pension, such as increasing Age Pension eligibility age (Commonwealth of Australia, 2015).

Figure 1. Examples of policy changes to the Australian retirement income system



In 1995 with the introduction of the phased increase to the Age Pension eligibility age for women – to 65 by 2013 – the Government took the first clear step towards extending Australians' working lives. Since then, a series of changes and incentives to extend older workers' labour force participation have been put in place. For example, in 1998 the Pension Bonus Plan was established, providing a tax-free lump sum payment for those eligible for the Age Pension who have deferred claiming the Age Pension and continued in paid work (this scheme was closed to new members in 2014). Likewise, an increase to the Age Pension eligibility age was announced in 2009: eligibility age would increase to 67 for both men and women by 2023, starting in 2016. This policy was

extended again in 2014 when it was announced that Age Pension eligibility would increase to age 70 by 2035.

In order to encourage longer working lives, a number of tax benefits have been implemented. For example, the tax on superannuation payouts at age 60 and over was abolished in 2007, and more recently, the seniors' and pensioners' tax offset and the mature age worker tax offset were introduced to reduce the tax payments of older workers. Other schemes implemented during the 2000s, such as the Deferred Pension Bonus Plan, the Transition to Retirement Pension and the Work Bonus, were designed to promote labour force participation among mature age Australians.

In terms of the superannuation contributions, in 1997 the maximum age for the Superannuation Guarantee was increased from 65 to 70. In 2002, the age for personal contribution increased from 70 to 75 and the non-mandated employer contributions were allowed for employees aged under 75. In 1999, it was decided that the superannuation preservation age will increase from 55 to 60 by 2024 – starting in 2017. In 2013, the age limit for Superannuation Guarantee was abolished.

Over the five-year period from 1999 to 2004, important measures were implemented to address age discrimination. First, the compulsory retirement age was abolished with the Commonwealth Public Service Act (1999) and the Abolition of Compulsory Retirement Age Act (2001). Then, the Commonwealth Age Discrimination Act (2004) prohibited discrimination on the basis of age, including a section on age discrimination in the workplace. Furthermore, in 2011 the first Age Discrimination Commissioner was appointed. However, age discrimination in the workplace is still widespread; in a study by the Australian Human Rights Commission it was found that 27% of Australians aged 50 and over report experiencing age discrimination in the workplace in the last 2 years (Australian Human Rights Commission, 2015)

Although a number of changes to retirement income policy have been designed to extend working lives, as shown in Section 2.1, policies are not consistent between the Age Pension and superannuation pillars. Superannuation preservation age is lower than the Age Pension eligibility age. Benefits can be accessed from age 55 (among those born before July 1st 1960) up to age 60 for those born from July 1st 1964. While many countries have tried to close the age gap between access to Age Pension and access to superannuation with policy reforms (Organisation for Economic Co-operation and Development [OECD], 2011), in Australia this gap is increasing. Even though the

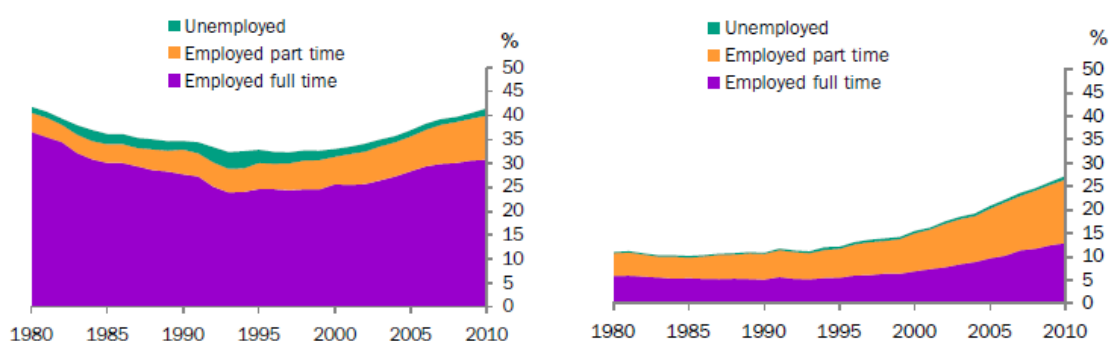
transition to retirement income streams allow people to access up to 10% of their superannuation while they continue working, there are still incentives to retire early. This large gap between Age Pension eligibility age and superannuation preservation age means that people may retire early, for example at age 60, and may expend their superannuation before reaching the Age Pension age (Chomik & Piggott, 2012). Having the opportunity to access pensions early results in lower labour force participation among older workers. In addition, this early access means that retirement income will need to last for more years in the context of increases in life expectancy (Chomik & Piggott, 2012). In sum, the Australian retirement income system still provides incentives for early retirement (McDonald, 2011).

2.2. Trends in labour force participation of older workers and retirement

The ageing of the Australian population is projected to generate significant fiscal pressures associated with health, aged care and pensions, over the coming decades (Commonwealth of Australia, 2010, 2015). One of the strategies to address this issue identified by the Intergenerational Report (Commonwealth of Australia, 2010, 2015) involves increasing the labour force participation rate of older adults.

Figure 2 shows that the labour force participation of mature age workers in Australia has been increasing in the last few decades, particularly among females. According to the Australian Bureau of Statistics (ABS), the labour force participation rate of the population aged 55 and over has increased from 25% to 34% over the past three decades, although the greatest increase has occurred in the past decade (ABS, 2010). The trends in labour force participation of males and females over the last 30 years are different (Figure 2).

Figure 2. Labour force participation of males (left) and females (right) aged 55 and over 1980 - 2010

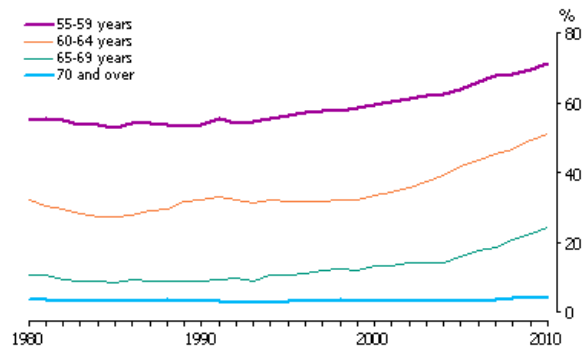


Source: ABS 1980-2010 Labour Force Survey in ABS Australian Social Trends, 2010.

Males' participation rate declined from 42% to 32% between 1980 and 1993 and remained relatively stable until 2002. Labour force participation of males increased to 42% in the 2002-2010 period. Labour force participation of females aged 55 and over was very low in the 1980s and remained stable until 1993, at around 11-12%. In the following 8 years, it reached 16% and further increased to 27% by 2010. Females in the 55-64 age group increased their labour force participation from 20-24% before the 1990s to around 55% in 2012. This increase is mainly the result of a cohort effect: the higher labour force participation of the younger cohort of females who now have reached this age group (Chomik & Piggott, 2012).

Figure 3 shows the increase in labour force participation in the last three decades by age group. Labour force participation decreases with increasing age; in 2010, 71% of those aged 55-59 were in the labour force, compared with 51% of those aged 60-64 and 24% of those aged 65-69 (ABS, 2010). However, labour force participation increased significantly in these three age groups over the 1980-2010 period. Among the oldest age group (70 and over), however, the participation rates have remained low: between 2.7% and 4.5% over this period (ABS, 2010). Looking at different age brackets with census data, McDonald (2011) showed that participation rates increased even among those aged 70-74 between 1996 and 2006.

Figure 3. Labour force participation 1980-2010 by age group



Source: ABS 1980-2010 Labour Force Survey, in ABS Australian Social Trends, 2010.

The increase in labour force participation of males and females aged 55 and over has been attributed mainly to strong economic growth over the last decade with the associated increase in the labour demand for all age groups (ABS, 2010). Other factors that could have played a role are more flexibility in employment arrangements and policy changes directed to increase participation (ABS, 2010). However, the increase in labour force participation of mature-age workers is small compared with the general increase in labour force participation between 2000 and 2010 (McDonald, 2011). McDonald estimates that 88% of the total increase in employment of those aged 55 and over during this period could be attributed to immigration and the ageing of the baby-boomer cohort, and only 12% to actual increases in participation. Other factors associated with this increase in participation identified by McDonald (2011) include improvements in health and level of education, more educated cohorts starting work later and, therefore, working until older ages, and more availability of part-time work and transitioning jobs.

Nevertheless, in order to maintain economic growth in the context of population ageing, labour force participation of mature-age workers will need to increase even more. Australia is still behind 11 OECD countries in terms of mature-age labour force participation rates of males and females (between 8% and 17%; Chomik & Piggott, 2012). Chomik and Piggott (2012) calculate that all else being equal, total participation rates will fall by 5% as a result of the ageing of the Australian population by 2050. They also make the point that if Australia had the mature-age participation of New Zealand, labour force participation will fall by 2% only as a result of ageing. These authors highlight the importance of increasing the labour force participation of older workers, in order to maintain economic growth (Chomik & Piggott, 2012).

Transition jobs or phased retirement has become more common in recent years. In 2013, the ABS reported that 37% of full-time workers had the intention to work part-time before retiring. In addition, 17% of those who intended to work full-time until retirement with the same employer wanted to do so performing less demanding tasks (ABS, 2013a), showing an increase from 11% in 2008-09 (ABS, 2009). Thompson (2007) estimated that between a third and half of older adults who previously worked full-time were working part-time in a transition to retirement.

Retirement

A trend towards early retirement was observed in most industrialised countries over the last few decades. More recently, retirement age and expected retirement age have been increasing. Significantly, research has shown that most of the early retirement trends observed in the last two decades was related to involuntary retirement and “neo-liberal workplaces and policies” (p. 317), as opposed to older workers’ decisions or retirement intentions (Jackson et al., 2006).

The average age at retirement in Australia, calculated by the ABS using the 2012–13 Multipurpose Household Survey (MPHS) for people aged 45 years and over, was 53.8 years (58.5 for males and 50.0 for females)¹. Out of the 1.5 million males who had retired from the workforce, 25% had retired before age 55, 50% had retired aged 55-64 and 25% had retired aged 65 or over. Out of the 1.9 million females who had retired, 55% did so before age 55, 36% retired aged 55-64 and 9% retired aged 65 or over (ABS, 2013a). These statistics show that there is still a significant gap in males’ and females’ retirement ages, as well as between actual retirement ages and the Age Pension eligibility age.

Although the average retirement age is still well below the Age Pension eligibility age, there has been a slight increase in the last few years. The ABS calculated that, in 2008-09, the average age at retirement was 53 – 58 for males and 49 for females (ABS, 2009).

¹ “It is important to note that data on retirement age presented in this publication refer only to ‘surviving’ retirees aged 45 years and over in 2012–13. Based on this, the distribution of retirement age in this population may not be representative of the age at which all people retire. For example, based on Australian life expectancy, a person who retired aged 40 years in 1988 (aged 65 years in 2013) would more likely be alive to participate in this survey than a person who retired aged 65 years in 1988 (aged 90 years in 2013). This effect will be more pronounced for estimates presented in relation to people who retired a long time ago, but will have some effect on all estimates, particularly as 33% of the retired population included in this publication retired more than 20 years ago. It should also be noted that people living in non-private dwellings such as retirement homes are excluded from this survey. This may result in the average age at retirement data presented in this publication, being lower than reality” (ABS, 2013a, p.4).

Furthermore, the average age at retirement for recent retirees – those who retired in the last five years – is also higher. In the 2008-09 survey, the average age at retirement for recent retirees was 60.2 years – 61.1 for males and 59.2 for females. In the 2012-13 survey, it was estimated that the average retirement age of recent retirees was 61.5, with men still retiring later than females – 63.3 and 59.6 respectively. The OECD has calculated that the average retirement age of Australians had a six-year decline between 1970 and 1990 but has increased by three years in the last 20 years (Chomik & Piggott, 2012).

Based on the Household, Income and Labour Dynamics in Australia survey (HILDA), increases in retirement ages were also found among older Australians (Wilkins, 2014). Among those retired, age at retirement was 58.5 for males and 50.7 for females in 2003. In 2011, the average retirement age of those retired was 59.3 for males and 53.2 for females. When comparing two retirement groups – those who retired in 1996-2003 and those who retired in 2004-2011 – the increase in retirement age is more evident. Males who retired in the 1996-2003 period had a mean retirement age of 59.8, compared with 62.6 for those who retired in 2004-2011. For females, those who retired in 1996-2003 had a mean age at retirement of 57.7, while the average age at retirement for those who retired in 2004-2011 was 59.7. The proportion of males and females who retired before age 60 decreased between these two periods. Consequently, the proportion retiring aged 60 or over increased: the proportion retiring at age 60-64 showed the greatest increase among females, while the proportion retiring at age 65-69 and 70 and over showed the highest increases among males (Wilkins, 2014).

Even though age at retirement has been increasing and the proportion retiring early – before age 60 – has been decreasing, expected retirement age is still below age 65. Using HILDA Wilkins (2014) found that the average expected² retirement age for workers aged 45-59 in 2011 was 64.3 for males and 62.7 for females. However, these retirement expectations are higher than those reported in 2003: workers aged 45-59 in 2003 reported a mean expected retirement age of 62.9 and 60.9 (males and females respectively; Wilkins, 2014).

² “Note that, in the older age group in particular, expected and preferred retirement ages are biased by the exclusion of people who have already retired. For example, the estimates will exclude a retired person aged 65 but include a non-retired person aged 65, the latter of whom by definition has a higher expected retirement age than the retired person (but may not have a higher preferred retirement age). For this reason, the estimates for the 45 to 59 age group, which are much less affected by this bias, are more easily interpreted” (Wilkins, 2014, p. 117).

According to the Australian Bureau of Statistics, for people in the labour force who intend to retire and indicated a retirement age, the average intended retirement age is 63.4 (63.8 for males and 63.0 for females; ABS, 2013a). This average shows a slight increase for females compared with the 2008-09 survey (62.5) and a slight decrease for males (64.2, ABS, 2009). Broken down by age group, 19% of males and 15% of females intend to retire at age 70 or older (compared with 14% and 9% respectively in 2008-09); 53% of males and 45% of females intend to retire at age 65-69 (compared with 52% and 39% in 2008-09); 22% of males and 29% of females intend to retire at age 60-64 (compared with 24% and 35% in 2008-09); and 7% of males and 12% of females intend to retire at ages 45-59 (compared with 10% and 17% in 2008-09; ABS, 2009, 2013a).

Although expected retirement age has increased in the last decade, preferred retirement age is still low. Analyses of HILDA show that the average preferred retirement age for workers aged 45-59 was 59.2 for males and 58.5 for females. This shows that there is a smaller gap between males and females in terms of preferred retirement age than expected retirement age. Preferred retirement age increased among the 45-59 population between 2003 and 2011 (by about one year), but the increase in expected retirement age in this period was larger (Wilkins, 2014).

Nonetheless, research has shown that plans for retirement are not realised in many cases. For example, only 40% of males aged 45-59 who in 2003 reported that they expected to be retired in 2011, were actually retired in 2011 (Wilkins, 2014). Based on analysis of HILDA in 2003 and 2011, Wilkins (2014) reported that 28.1% of males and 31.8% of females would retire later than expected and 48.1% of males and 54.0% of females retired earlier than expected. These discrepancies between plans for retirement and actual retirement could be explained by a number of reasons. For example, older adults face significant barriers to labour force participation, which could lead them to retire earlier than expected. On the other hand, financial insecurity may lead to delayed retirement. Some of these constraints are discussed in the next section.

2.3.Constraints in retirement decisions and labour force participation

Exiting the labour force is in many cases an involuntary event which is influenced by a number of constraints beyond the individual's control and unrelated with the decision-making process. It has been estimated that around 60% of retirees consider their

retirement involuntary, caused mainly by health problems or economic recession (McDonald, 2011). Retirement results from a complex combination of voluntary and involuntary aspects and only a few of them are intentions or decisions (Jackson et al., 2006).

A significant factor that forces many older Australians into an involuntary retirement is poor health. Among the reasons for leaving the last job, 25% of males and 21% of females reported 'own sickness, injury or disability' (ABS, 2013a). Another study showed that 31% of Australian males and 18% of Australian females aged 45-64 retired involuntarily due to poor health (Pit, Shrestha, Schofield, & Passey, 2010). Moreover, partner's health status and caring responsibilities for other family members can also force some older adults, especially females, into involuntary retirement (Warren, 2006; Wolcott, 1998)

Job-related circumstances can generate involuntary transitions into retirement. For example, 'retrenched/dismissed/no work available' was the main reason to cease the last job mentioned by 10% of males and females in the most recent "Retirement and Retirement Intentions" survey (ABS, 2013a). In addition, there is evidence of limited employment opportunities for older adults in Australia. Although unemployment rates for older workers are similar to those in other age groups, once older workers become unemployed they spend longer periods in unemployment and have a lower probability of finding work. For example, older adults are often affected by retrenchment and have a lower probability of being re-employed, relative to other age groups (Borland, 2005). These limited opportunities translate into large numbers of older adults retiring when they would rather be in the workforce. Chomik and Piggott (2012) calculated that if all people aged 55 and over who are inactive and would like to work were in employment, the labour force participation of mature-age workers would be six percentage points higher, which would be worth 2.4% of Gross Domestic Product (GDP).

The Consultative Forum on Mature Age Participation was established in 2010 by the Australian Government to propose strategies to address barriers to labour force participation of older Australians. The Forum identified 14 barriers: discrimination on the basis of age; caregiving responsibilities; flexibility of employment arrangements; issues around private recruitment firm practices; job search assistance; leisure time trade-off; mental health barriers; mismatch of skills and experience with industry demands; physical illness, injury and disability; re-entry issues for the Very Long-Term Unemployed (VLTU); re-training and up-skilling barriers; superannuation; tax transfer

system; and workplace barriers (National Seniors Productive Ageing Centre, 2011). The national Survey of Barriers to Employment for Mature Age Australians was conducted in late 2011 and early 2012 among people aged 45-74 ($n = 3,007$). Results showed that a high proportion of respondents have experienced barriers such as age discrimination, physical illness, injury and disability, caregiving responsibilities and leisure time trade-off (Adair & Temple, 2012). The authors also calculated the number of potential workers and hours of work that are being lost because of these barriers. For example, they calculated that flexible work arrangements for those with caregiving responsibilities and those with a physical illness, injury or disability would result in almost 450,000 employees by 2013 and 1,200,000 hours worked per week among part-time workers. It was also estimated that the barrier of caregiving responsibilities results in a loss of 3.5 million hours worked among those not in the labour force (Adair & Temple, 2012).

The Australian Government has implemented two main programs directed to employers in order to address some of these barriers. The “Restart” wage subsidy offers up to A\$10,000 for employers who employ eligible job seekers aged 50 years or over for 12 months or more (Department of Employment, 2015a). A second program is “Corporate Champions”, which consists of professional advice in recruitment and retention of workers aged 45 and over (for a value up to A\$20,000; Department of Employment, 2015b). The Government expects that the increase in Age Pension eligibility age, together with these two programs and the work against age discrimination, will increase labour force participation of older workers and reduce early retirement due to unemployment. According to the latest Intergenerational Report (Commonwealth of Australia, 2015), the Government estimates an increase in labour force participation among people aged 65 and over from 12.9% in 2014-15 to 17.3% in 2054-55.

Voluntary decisions to retire are influenced by the surrounding policy context (Patrickson & Ranzijn, 2004). Therefore, the incentives, disincentives and opportunities generated by current policy may constrain the possibilities and feasibility of older Australians preferences in regards to their retirement plans and decisions (see also Section 2.1). Formal evaluation of the long-term effectiveness of these initiatives is needed in order to ensure that older adults are having access to appropriate job opportunities.

More broadly – beyond the national retirement policy context – the prevailing macroeconomic situation can also limit older adults’ choices. For example, the Global

Financial Crisis in 2008 reduced retirement investments for many people approaching retirement, which may have forced people to delay retirement. A national survey of Australian Baby Boomers conducted in mid-2009 reported that more than 35% of working males and more than 42% of working females were in a worse financial position compared with their situation a year earlier. This study also reported that 32% of working males and 41% of working females had postponed their retirement following the Global Financial Crises, and workers in older age groups were more likely to postpone retirement than their younger counterparts (Kendig, Wells, O'Loughlin, & Heese, 2013; O'Loughlin, Humpel, & Kendig, 2010).

In contrast, a recent study using HILDA found a decrease in the proportion of involuntary retirement between 2003 and 2011 among Australian males and females. In the eight years prior to 2011, 49% of males and 53% of females retired voluntarily, compared with 41% and 46% respectively in the eight years prior to 2003. The authors point to a stronger labour demand in the second period as probably explaining the decrease in job-related involuntary retirement among females. Among males, they suggest that changes in job characteristics over time, mainly lower proportions of males working in manual labour, is a key factor influencing the decrease in involuntary retirement due to poor health (Wilkins, 2014). The latter was also highlighted by McDonald (2011) as a reason for the increase in labour force participation of mature age workers in the last few decades. The incidence of involuntary retirement is important, as lack of choice in retirement transitions has been associated with poorer well-being outcomes in retirement (De Vaus et al., 2007).

In sum, involuntary retirement affects a large proportion of older workers in Australia (Jackson et al., 2006; McDonald, 2011). Therefore, when investigating the retirement process, it is important to bear in mind that older workers' choices and preferences are limited and delimited by the context and constraints of the environment in which the transition to retirement occurs.

3. Retirement and social connectedness: review of the literature and theoretical approaches

Chapter 1 gave a brief overview of current knowledge about the association of retirement with social connectedness and identified a significant gap in the literature that this study aims, at least in part, to fill. This chapter provides a more extensive discussion of the literature on retirement and social connectedness. The first section (3.1) provides definitions of social connectedness and the process of retirement and reviews the literature on retirement and social connectedness. The second section (3.2) examines literature on other factors associated with retirement transitions. The last section (3.3) outlines the gap in the literature, discusses relevant theoretical approaches and provides a conceptual framework for the present thesis. Finally, the research questions are presented.

3.1.Social connectedness and the process of retirement

In order to understand the role of social connectedness in the process of retirement, it is important to understand the meaning of social connectedness, the context in which social connectedness is situated and its association with developmental aspects of ageing. This section first defines social connectedness (3.1.1), and then presents a discussion of social connectedness at older ages and age-related changes in social connectedness (3.1.2). Section 3.1.3 outlines the phases in the process of retirement and Section 3.1.4 discusses the findings of studies that have examined social connectedness and retirement.

3.1.1. Definition of social connectedness

Social connectedness refers to a group of concepts related to human relationships and interactions. It includes people's networks, the quality of their networks, the support they get from their network and their social engagement with network members, groups and organisations. A useful framework to understand social connections is the convoy model (Antonucci & Akiyama, 1987b). The convoy of social relations was defined by Antonucci and Akiyama (1987b) as "a protective layer, in this case, of family and friends, who surround the individual and help in the successful negotiation of life's challenges" (p. 519). There are four tenets underlying this framework. First, social

relations have objective and subjective characteristics. Objective characteristics are the structural aspects of social relations, such as number of network members, frequency of contact, network density (how many network members know each other) and characteristics of network members. Subjective characteristics involve social support provided by the network and the quality of this support. Four types of social support that can be provided by network members were defined by Berkman and colleagues: emotional, instrumental, informational, appraisal (Berkman et al., 2000).

The second tenet of the convoy model is concerned with the dynamic and flexible nature of social relations. The model states that “social relationships and networks change over time because of developmental and contextual processes” (Antonucci, Fiori, Birditt, & Jackey, 2010, p. 434). Members of the convoy will change over time, and the nature of the relationships with some remaining convoy members is also likely to change. The third tenet states that although individual characteristics are important in shaping social relationships, the individual’s situational characteristics are as important in the development of social relations. Finally, this model suggests that social networks and relationships have a significant influence on well-being; several studies have demonstrated that those in better- integrated, more diverse networks have better physical and mental health than those in more restricted networks (e.g., Berkman et al., 2000; Bowling & Grundy, 1998; Fiori & Jager, 2012; Litwin & Shiovitz-Ezra, 2011).

Beyond these closer relationships, people also participate in other activities which link them with groups of people who are not necessarily part of their close circle of network members. Participation in these activities, such as organised group activities or formal volunteering, provides opportunities for social engagement which is also beneficial for health and well-being (Berkman et al., 2000).

Four components of social connectedness are investigated in the current study: network structure, social support, network quality and formal social engagement. The variables used to measure these components are presented in Chapter 4. Social connectedness is examined separately for males and females because sex differences in social connectedness have been consistently reported in the literature. For example, females’ networks tend to be larger and more integrated than males’ networks (Fiori, Antonucci, & Cortina, 2006), and females are more likely to have diverse networks than males (Windsor, Rioseco, Fiori, Curtis, & Booth, 2016). In addition, females tend to receive support from a number of different people while males tend to rely on spouses for emotional support (Antonucci & Akiyama, 1987a; Gurung, Taylor, & Seeman, 2003).

3.1.2. Age differences and age-related change in social connectedness

A number of empirical studies have shown age differences and age-related changes in people's social networks. A study by Cornwell, Laumann and Schumm (2008) documented that older adults' social networks are smaller than younger adults' networks. Van Tilburg (1998) found a negative association between network size and age at the cross-sectional level in a sample of Dutch adults aged 55-98, although network size was observed to be stable at the intra-individual level over the four-year observation period.

Although older adults tend to report smaller networks than younger adults, they also report higher satisfaction with their networks than do younger adults (Antonucci, 1985; Lansford, Sherman, & Antonucci, 1998). A U-shaped association between age and volume of contact with network members was reported in a cross-sectional study, showing that volume of contact is lowest among those in their late 60s and early 70s (Cornwell et al., 2008). The study by Cornwell et al. (2008) also found that age was positively associated with frequency of religious participation and participation in voluntary work. Research has shown that males aged 65-74 are more likely to participate in voluntary work than men aged 45- 49 (Moen & Flood, 2013).

In general, changes in social relations associated with age vary across indicators. For example, emotional support is mostly stable over time, while contact with friends declines with advancing age (Shaw, Krause, Liang, & Bennett, 2007) and instrumental support received tends to increase over time (van Tilburg, 1998). It is important here to draw distinctions between types of networks. The literature shows that relationships with family, friends and formal networks (such as within voluntary work organisations) are likely to play different roles in older adults' lives, particularly in the provision of support and resources. Therefore, different types of networks may have different effects on health and well-being. For instance, social activities with friends have a stronger positive effect on older adults' subjective well-being than activities with family (Huxhold, Miche, & Schüz, 2013). Researchers have suggested that it is the discretionary nature of friendship that enhances its effects on well-being (Huxhold et al., 2013; Litwin, 2006). Research has also shown that friends are one of the main sources of emotional support, while children tend to provide more instrumental support (Seeman & Berkman, 1988). However, as people get older, the number of friends in their network decreases and the number of close relatives in the network increases (van Tilburg, 1998). In addition, interaction with formal networks through formal social

engagement provides a sense of value and meaning to life and allows individuals to feel attached to their community (Berkman et al., 2000). Given the different roles of family, friend and formal networks, these three types of networks are studied separately in their associations with the process of retirement in this thesis.

3.1.3. Phases in the process of retirement

The definition of retirement as a process and the different phases older adults may go through during this process were briefly outlined in the introduction in Chapter 1. This section provides more detail on the phases of retirement as defined by Atchley and Barusch (2004).

According to these authors, the first phase is the pre-retirement phase. This phase involves a remote phase and a near phase. The near phase is when retirement starts to get closer, and people start preparing to separate themselves from their current job. The pre-retirement phase is followed by the retirement event, when people leave the labour force. Immediately after this, they may take one of three pathways: ‘honeymoon’, ‘immediate retirement routine’ or ‘rest and relaxation’. ‘Honeymoon’ involves a phase of euphoria in which retirees want to do the things they did not have time to do when they were working. ‘Immediate retirement routine’ involves settling into a satisfying stable routine right after retirement. The authors suggest that individuals who had been involved with people and activities outside their working life are likely to settle into a satisfying routine easily. ‘Rest and relaxation’ is identified as a low activity phase that some people enjoy after having spent a long time in the labour force.

Atchley and Barusch (2004) outline another four possible phases after the immediate reaction to the event of retirement has passed. ‘Disenchantment’ can happen to those who do not adjust well to retirement, although the authors state that this is probably rare. A ‘reorientation’ phase can take place after the ‘rest and relaxation’ phase or after a period of ‘disenchantment’ and involves developing a satisfactory retirement routine based on realistic goals and using their previous life experiences. A ‘retirement routine’ is achieved when retirees “know what is expected of them and they acknowledge their capabilities and limitations. They are self-sufficient adults, going their own way, keeping usefully busy, and managing their own affairs” (p. 260). Finally, the ‘termination of retirement’ represents the phase where the retirement role is no longer relevant for older adults. For example, the retirement role may be replaced by the

‘disabled’ role when major disability or illness become a central part of older adults’ lives. This phase is not considered in this thesis, since the focus is on retirement itself.

Atchley and Barusch (2004) defined these phases as different pathways that some people may go through during the process of retirement; it is not assumed that everyone will go through all of them. Instead, “the phases of retirement form a conceptual framework that can be used to understand the issues and possibilities connected with approaching, playing and giving up the retirement role” (p. 261). This understanding of what older adults may be experiencing during the time leading to exiting the labour force and after their exit provides a useful framework to situate the association between social connectedness and retirement. This relationship will be investigated in both the pre-retirement phase and the retirement phase (excluding ‘termination of retirement’). No attempt is made, however, to situate respondents within retirement phases in this study. Instead, the characteristics of these phases are used in the interpretation of the association between social connectedness and the process of retirement.

3.1.4. The association between social connectedness and retirement

Research on social connectedness and retirement has focused mainly on three areas. First, research has investigated the effect of social connectedness on retirement timing and probability of retiring, mainly in terms of marital quality. Second, research has studied differences in social connectedness between retirees and workers, focusing mainly on network size and male samples. Third, the effects of the transition to retirement on certain aspects of social connectedness have been examined.

Regarding the first area of research, a longitudinal study by Kubicek, Korunka, Hoonakker and Raymo (2010) showed that higher marital satisfaction was the second strongest predictor of early retirement, after economic factors. They found that higher marital satisfaction made retirement an attractive alternative to working life, and that it had a stronger effect than job satisfaction, but in the opposite direction. The authors suggested that this finding indicates a stronger ‘pull’ effect into retirement by older workers’ expectations of retirement, compared with the ‘push’ effect of factors such as dissatisfaction with their current employment. Similarly, Szinovacz and DeViney (2000) found that males and females in good quality marriages had higher probabilities of retiring. Using the same dataset – the National Survey of Families and Households in the United States – Song and Marks (2004) found that marital happiness at the first assessment was associated with higher probability of retirement at the second

assessment. These findings are consistent with the finding that marital quality after retirement is dependent on pre-retirement marital quality (Myers & Booth, 1996). In this context, older workers who are in non-satisfactory relationships have a disincentive for retirement, since retirement is likely to involve more time spent with their spouse. Similarly, Gustman and Steinmeier (2004) found that a significant portion of the interdependence of retirement decisions between spouses was accounted for by the value that each spouse assigns to spending time together in retirement. In addition, spouses who expect increases in marital conflict after retirement are less supportive of their spouses early retirement (Henkens, 1999).

Having more time for activities and involvement with family outside the marital relationship, can also be an incentive for retirement (Wolcott, 1998). A few studies have gone beyond the relationship with partners and looked at other family relationships. Szinovacz et al. (2001) highlighted the importance of studying family relations and retirement in different subgroups (such as by sex and marital status). They found that women with children were more likely to retire and married women with no children were less likely to retire. Men who were not married were also found less likely to retire. In relation to contact with children, the authors found that among men who were not married, those who had contact with children on a monthly basis were more likely to retire than those who did not. Married and non-married women who did not have monthly contact with their children were also less likely to retire. These results show the importance not only of having a partner and the quality of the marital relationship, but also the importance of having children and the frequency of contact with children, in determining the probability of retirement.

Elovainio and colleagues extended the social variables in the study of retirement beyond the family sphere. Using measures of network size (number of close personal relationships) and heterogeneity of the social network (number of different roles that people who provide social support occupy: spouse, near relative, friend, co-worker, neighbour, some other person, or none), this study found that women with no sources of support were less likely to plan for an early retirement (before age 55), but that no effect was observed for males (Elovainio et al., 2003). Lancee and Radl (2012) used the German Socioeconomic Panel Study to investigate associations between social connectedness indicators and transitions from work to retirement using event history analysis. These authors found that frequency of social activities with friends, family or neighbours was associated with earlier retirement. They also found that their measure of

formal participation (based on frequency of voluntary work and civic participation) led to later retirement.

The studies discussed so far provide evidence of an association between social connectedness and the probability of retirement. However, they only include limited aspects of social connectedness, with most research focusing on marital quality. In the studies by Szinovacz and colleagues, relationship quality is studied only in relation to partner and contact with family members only considers frequency of contact with children. The study by Elovainio et al. does not consider frequency of contact or quality of relationships, while the study by Lancee and Radl only considers activities. In addition to these limitations, these studies have not included relationships with friends or neighbours separately from family relationships. Each of these different domains of social connectedness is taken into account in the present study.

Regarding the second area of research – comparing workers and retirees – Bossé and colleagues studied the association between social networks and retirement status using two measures: a combined measure of network size and frequency of contact (which they called quantitative support) and number of confidants and support available from family and friends in case of a crisis (which they called qualitative support). They found that retirees had lower quantitative support than workers, but that there were no differences in qualitative support (Bossé, Aldwin, Levenson, Workman-Daniels, & Ekerdt, 1990). Bossé and colleagues also conducted a longitudinal study. In this study they found that long-term retirees had the lowest quantitative support and full-time workers had the highest. Nevertheless, these authors did not find any effect of retirement on quantitative support during the three years of the study. This study also found that recent retirees had higher levels of support than those who were retired at both measurement occasions of the study (Bossé et al., 1993). These findings suggest that the smaller network size and lower frequency of contact observed among long-term retirees was the result of a gradual decrease over time rather than an immediate result of retirement. Cornwell et al. (2008) found that retirees had a lower volume of contact than workers, but they had larger networks, higher frequency of socialising with neighbours, and reported higher closeness to network members than workers. However, the focus of this study was the association between age and social connectedness, and retirement status was a control variable.

Two longitudinal studies have investigated network size and work-related networks among workers and retirees. A study of working and retired Dutch males did not find

changes in network size among either group over a 10-year period (van Tilburg, 2003). However, when work-related network members were examined, a decline in their numbers among both retirees and workers was found, but there was a greater decline among retirees (van Tilburg, 2003). Similarly, another study by van Tilburg (1992) collected data on social networks before and after retirement, finding no major change in network size. However, changes were observed in the composition of the network: as it could have been expected, the main change was a decrease in the proportion of work-related relationships in older adults' networks. Most research on social networks and retirement has been conducted among male samples.

In relation to the third area of research – the effect of retirement on social connectedness – a longitudinal study showed that among men, retirement was associated with modest increases in solitary activities, time spent with friends and unpaid work (Palmore, Fillenbaum, & George, 1984). The same authors analysed the consequences of retirement among males and females. For both sexes they found increased time spent in personal hobbies after retirement, as well as increased interaction with friends (George, Fillenbaum, & Palmore, 1984). These studies are limited, however, in that although they analysed longitudinal data, their measure of activities was static: their outcome variables were measured in the last wave of the study – after retirement occurred – and initial pre-retirement levels of these variables at baseline were controlled for (conditional change models). Therefore, these studies did not investigate the trajectories of activities *throughout* the process of retirement.

Several studies have focused on the association of retirement with productive activities such as voluntary work. Retirees can be particularly motivated to participate in such activities. For instance, voluntary work can provide opportunities to improve self-esteem (Okun, 1994) and can compensate for the absence of paid work (Luoh & Herzog, 2002). These reasons are consistent with Continuity Theory, which states that older adults stay connected to their past in order to maintain their internal identity and external structures (Atchley, 1971). In this context, engagement in productive activities such as voluntary work after exiting the paid labour force would help older adults maintain continuity through the transition from work to retirement. In addition, voluntary work provides opportunities to occupy social roles and give meaning to life (Thoits, 2012). Consistent with this, retirees tend to do more hours of voluntary work than workers (Caro & Bass, 1997; Moen & Flood, 2013; Musick & Wilson, 2008). Moreover, retirement has been associated with starting voluntary work among non-

volunteers (Mutchler et al., 2003) as well as increasing participation among volunteers (Moen, Erickson, Agarwal, Fields, & Todd, 2000). Research has also shown that there is a trade-off between paid work and voluntary work. Males and females who work full-time are less likely to volunteer than those who work part-time, are self-employed or do not work for pay. In addition, among males, those who do any work for pay spend less time volunteering than those who are retired (Moen & Flood, 2013).

3.2.Factors associated with retirement transitions

Research on retirement has usually focused on a particular set of factors or emphasised a specific approach. For instance, some researchers have looked at retirement as a rational economic decision. Others have emphasised how occupation and organisational characteristics can influence preferences for a shorter or longer working life, yet others have highlighted the importance of health. This section reviews some of the main findings on other factors associated with retirement.

3.2.1. Demographic factors

Numerous studies have shown that the probability of retirement varies by age and sex. For example, in Australia, increasing age is associated with a higher probability of retirement (ABS, 2009; Wilkins et al., 2010). In a study of public servants in Australia, older age was also associated with the intention to retire sooner (Oakman & Wells, 2013). However, being in an older birth cohort has been found to be associated with higher planned retirement age (Delpachitra & Bael, 2002; Sargent-Cox, Anstey, Kendig & Skladzien, 2012). This finding could be associated with having accumulated less superannuation (in Australia, the Superannuation Guarantee was only established in 1992; see Chapter 2).

In relation to sex, the pattern of labour force attachment is generally different for men and women throughout the life course (Jefferson, 2005; Moen, 1996). Women are more likely to work part-time (Han & Moen, 1999; Loh & Kendig, 2013) and to have intermittent labour force attachment (Han & Moen, 1999; Honig, 1996; Jefferson, 2005). In addition, women have greater labour force participation near the end of their careers, relative to earlier in life (Fullerton, 1999). These differences in labour force participation lead to different retirement transitions for males and females. Females tend to retire at a younger age than males (ABS, 2009; Wilkins et al., 2010). In addition, males are more responsive to financial incentives, while females' labour force

participation is mostly affected by partner's retirement, caring responsibilities and health (Moen, 1996; Warren, 2008; Warren & Oguzoglu, 2010).

Marital status has been shown to influence retirement timing and planning and research has reported an interaction between labour force participation and partnership status (Borland & Warren, 2006). Being partnered has been associated with a younger expected retirement age (Sargent-Cox et al., 2012; Knox 2003). However, partnered males aged between 55 and 64 are more likely to be in paid work than those not partnered (McDonald, 2011). Partner's retirement status can also influence older workers' retirement, and this is generally more important for females (Moen, 1996; Warren, 2006).

A recent study using HILDA found that wives' labour force participation encourages labour force participation of their husbands in a sample of mature aged Australians. This study estimated that an increase of four percentage points in husbands labour force participation between 2002 and 2011 could be attributed to their wives labour force participation – which increased from 48% to 63% in this period (Zhu, 2014). In terms of patterns of labour force participation of females, having a partner who is not employed significantly increases the probability of females' retirement (Warren, 2008).

In addition, partner's poor health or caring needs are associated with an increased probability of retirement (Wolcott, 1998; Warren, 2006). However, the effect of partner's health can be different for males and females, and it can be related to the need for care (which is likely to increase the probability of retirement) or the need for financial support (which is likely to reduce the probability of retirement). Warren (2008) found that females were more likely than males to give up full-time work in order to care for a family member. A national survey on barriers to employment for older workers in Australia found that caring responsibilities are a significant barrier to employment and affect females' labour force participation to a much greater extent than males' (Adair & Temple, 2012).

Having dependent children has been associated with a longer working life (Warren & Oguzoglu, 2010). Again, there are differences by sex. Warren (2008) found that the presence of resident children reduced Australian females' probability of full-time employment but increased the probability of full-time employment for Australian males.

Marriage itself usually involves a number of obligations or responsibilities, such as caring for children, household management and caring for other family members

(Bryant, 1990, as cited in Kim & DeVaney, 2005), which, as shown above, can influence older adults' labour force participation. At the same time, having a partner gives the opportunity for joint leisure activities at older ages, as well as financial security. Therefore, in the context of good quality of relationships, marital status can be an incentive for retirement. However, caring responsibilities associated with marital status can force older adults, particularly females, into retirement. At the same time, financial responsibilities associated with marital status may require for older adults to stay at work.

3.2.2. Financial circumstances

Financial circumstances are one of the most consistent predictors of retirement planning and retirement timing cited in the literature (e.g., Beehr, 1986; Taylor & Shore, 1995; Beehr, Glazer, Nielson, & Farmer, 2000; Palmore, George, & Fillenbaum, 1982) and it is generally a condition for retirement to occur. As Beehr and colleagues (2000) have stated, older adults are "... generally more likely to leave the workforce if they can financially afford to retire than if they cannot" (p. 207). Financial circumstances have also been found to be a strong predictor of retirement planning and retirement transitions in a number of studies in Australia (e.g., Hamilton & Hamilton, 2006; Humpel, O'Loughlin, Wells, & Kendig, 2009; Knox, 2003; Sargent-Cox et al., 2012; Warren 2006). Financial security is one of the main reported factors influencing retirement decisions by those still in the labour force (39% of males and 36% of females; ABS, 2013a). Overall, it is clear that people who do not have enough income or do not have access to social security benefits, generally cannot afford to stop working.

Financial circumstances or financial factors are broad concepts. A number of studies have focused on different groups of financial variables when analysing retirement transitions. 'Financial status' or 'financial security' include a variety of measures of financial circumstances, such as pensions and social security payments, savings, home ownership, health insurance, etc. Pensions and social security, for instance, have been found to play an important role in retirement decisions (Bacon, 1997; Gustman & Steinmeier, 1986; Warren & Oguzoglu, 2010). Although only 13% of Australian males and 11% of females in the labour force report 'reaching the eligibility age for an age (or service) pension' as the main factor influencing their decision to retire, 44% of males and 30% of females give the reason 'reached retirement age/eligible for superannuation/pension' as their main reason for ceasing their last job (ABS, 2013a).

In terms of household income and assets, a higher level of assets along with lower levels of household debt create a higher demand for leisure time, reducing the years spent at work (Bryant, 1990, as cited in Kim & DeVaney, 2005; Kilty & Behling, 1985). In Australia, higher wealth has been associated with earlier retirement (Borland, 2005). Similarly, personal savings give older workers confidence that they will have sufficient financial resources for their retirement (DeVaney & Chien, 2001; Montalto, Yuh & Hanna, 2000). In Australia, among older adults aged 55-65, those who have already paid off their house have lower labour force participation rates than those who are still paying their mortgage (McDonald, 2011). An Australian study showed that over 40% of females and over 30% of males had to postpone their retirement due to the loss of savings during the Global Financial Crisis in 2008 (O'Loughlin et al., 2010).

Although income is essential in the accumulation of wealth, and having a higher level of household assets is likely to allow people to retire, high income is also an incentive for extending working life and postponing retirement (e.g., Honig, 1996). Nevertheless, the increase in retirement income obtained by postponing retirement needs to be large enough to offset the reduced number of years in retirement to make that extension of working life worthwhile (Warren & Oguzoglu, 2010). Research on retirement planning in Australia and the United States has shown, however, that being in the highest income tertile is associated with younger expected retirement age, while being in the highest wealth tertile was associated with an older expected retirement age (Sargent-Cox et al., 2012). In their study of the determinants of partial and full retirement, Kim and DeVaney (2005) found that financial factors (investment assets and debt in this case) had a significant positive effect on full retirement, but none of the financial categories had any influence on partial retirement.

In sum, although financial position has been measured in a variety of ways depending on the measures available and on the focus of the study, it has been consistently found that older workers' financial circumstances play a significant role on retirement planning and the probability of complete retirement. Nevertheless, financial aspects are only part of the retirement decision.

3.2.3. Health

Health is one of the most consistent predictors of early retirement found in the literature. Several studies have found that poor health is associated with retirement (e.g., Holtmann, Ullmann, Fronstin, & Longino, 1994; Honig, 1996) and older adults who are

in better health tend to plan for later retirement compared with those in poorer health (e.g., Taylor & Shore, 1995; Sargent-Cox et al., 2012). In addition, personal health status is a commonly reported factor influencing the decision to retire (Warren, 2006) and a common reason for ceasing the last job (25% of Australian males and 21% of females; ABS, 2013a).

Poor health is a significant predictor of early retirement (Henkens & Tazelaar, 1994; Palmore et al., 1982; Feldman, 1994; Wolcott, 1998). Longitudinal research using the Whitehall II cohort study of white collar workers in the United Kingdom has confirmed the important role of health status in the process of retirement (Jökela et al., 2010; Hyde, Ferrie, Higgs, Mein & Nazroo, 2004). Similarly, longitudinal research from the Netherlands has shown that health is a significant predictor of planned retirement age and retirement timing (van Solinge & Henkens, 2014). In Australia, using the HILDA longitudinal study of Australian households, Warren (2008) found that health is the main predictor of the pathway to retirement. That is, health status seems to be the most important determinant of the trajectory that older workers take from paid work to complete retirement. A number of other Australian studies have found a significant association between health status, labour force participation of older workers and retirement (e.g., Borland & Warren, 2006; Cai & Kalb, 2007).

In a study of voluntary and involuntary retirement, Shultz and colleagues (1998) found that, retrospectively, those who considered their retirement as involuntary thought that their poor health was the most influential factor in their decision to retire. In contrast, for those who considered their retirement as voluntary, the desire to ‘do other things’ and their financial security were identified as the main reasons to retire (Shultz, Morton, & Weckerle, 1998). These results show that poor health can force older workers into retirement, while people in good health have more control over their decision and may be motivated to retire by the prospect of pursuing other activities.

3.2.4. Education

Education has a positive association with labour force participation (Buddelmeyer, Lee, & Wooden, 2010) and higher levels of education are associated with later retirement (Hayward & Hardy, 1985; Holtmann et al., 1994). In Australia, according to the 2006 Census, 65.4% of males aged between 60 and 64 with a university degree were employed, compared with 48.8% of males in this age group with no post-school qualifications (McDonald, 2011). As McDonald (2011) points out, people with a

university degree are likely to have started working later in life – compared with those with no qualifications – and research has shown that time in employment is a significant predictor of age at retirement (Warren & Oguzoglu, 2010).

Work by Kim and DeVaney (2005) attempted to identify the differing roles of level of education on full retirement and partial retirement. They hypothesised that higher levels of education give the opportunity to have more desirable jobs and better working conditions. In this context, the authors predicted level of education to have a negative association with full retirement and a positive association with partial retirement. The results from their longitudinal analysis supported their hypotheses, and the authors highlighted that more educated workers will probably have more opportunities to choose from a number of retirement options (Kim & DeVaney, 2005). Older workers with higher education are more likely to have access to jobs that provide more flexibility (Kim & DeVaney, 2005) and flexibility has been found to be a significant factor in extending working lives (Knox, 2003). These findings could also be related to the aspirations of more educated people, generally with higher socioeconomic status, in terms of quality of life and leisure, and the possibility of having access to good quality jobs. Higher level of education was associated with older expected retirement age in Australia and the United States (Sargent-Cox et al., 2012). It is possible that the later expected retirement ages reported by the more educated were a result of those with more education contemplating more flexible working options; in the same study, working part-time was also associated with later expected retirement age.

3.2.5. Employment characteristics

A number of studies have explored the influence of occupation, employment and organisational characteristics on retirement transitions. Different aspects have been studied within this area, from more specific elements such as characteristics of the tasks, to more general aspects such as job flexibility, and subjective elements such as stress and job satisfaction.

There is evidence in the literature that employment or job-related variables have an influence on the retirement decisions of older workers. Honig (1996) for instance, found that elements such as repetitive tasks or job stress are associated with early retirement. Job satisfaction is one of the most studied aspects of employment characteristics in relation to retirement. In a longitudinal study of workers in the United Kingdom (Whitehall II cohort study), it was found that job satisfaction was associated with later

retirement (Hyde et al., 2004). Using the same study, Mein et al. (2000) found that males and females who were not satisfied with their job were more likely to retire early. However, throughout the literature job satisfaction has given inconsistent results (Kim & DeVaney, 2005). One of the limitations of the Whitehall II study is that the sample consists only of white-collar public servants (Hyde et al., 2004; Mein et al., 2000), so these results may not apply to other populations.

As discussed before in relation to education, higher-level occupations – which usually require higher levels of education – are likely to be more flexible and provide more freedom and choice to older workers. Therefore, the educational and occupational characteristics of the sample in which the effect of job characteristics on retirement is studied can influence the results. In addition, the characteristics of the occupation are also linked to health status. For instance, physical jobs put great strain on older workers and increase the probability of workers having to retire because of health reasons or because they are not able to conduct manual jobs anymore. Nowadays, a lower proportion of jobs are physically demanding, such as in agriculture or manufacturing (Chomik & Piggott, 2012). Less physically demanding jobs are associated with longer working careers (Blekesaune & Solem, 2005), although some studies have found no effect of physically demanding jobs on retirement timing (van Solinge & Henkens, 2014).

Regarding planned retirement age, Taylor and Shore (1995) found that employment and organisation-related factors explained a significant but modest 3% of planned retirement age variance, beyond the contribution of other factors, such as finances and health. In Australia, Sargent-Cox and colleagues (2012) found no effect of job satisfaction on expected retirement age. A longitudinal study of retirement intentions and behaviour in the Netherlands showed that job pressure was associated with earlier retirement planning while job challenge was associated with later retirement planning. In terms of retirement behaviour, job challenge did not have a significant effect, but growth opportunities did: higher growth opportunities were associated with later retirement timing (van Solinge & Henkens, 2014).

The lack of consistency in these results may be related to the different measures and samples used across studies. Most studies include different variables – job satisfaction is probably the element most consistently included – and if similar variables are studied, they are not necessarily measured in the same way. One thing that seems to be clear from the literature is that the effect of job characteristics on retirement planning and

transitions is less consistent than that of financial circumstances and health status. However, for those in good health and with sufficient financial resources, the type of job and related aspects such as stress and job satisfaction can significantly influence their motivation to retire.

3.3. Research gap, conceptual framework and research questions

The review of the literature in this chapter has shown that although a great amount of research has addressed retirement transitions, much remains unknown about the association between retirement and social connectedness. In relation to the factors associated with retirement, individual-level factors or characteristics have been the main focus. However, individuals are embedded in a social network and the different spheres in which they participate, such as work, family, and groups, are also interconnected. Not only can the structural characteristics of the social network that surrounds older workers influence their behaviour (e.g., partner's retirement status, having dependent children), but the quality of their relationships with those around them, the frequency of contact and the level of support may also influence their retirement planning and behaviour.

Although some studies have incorporated social connectedness in the study of retirement – as discussed in Section 3.1.4 – these studies have not included the whole spectrum of social connectedness indicators (network structure, network quality, social support and formal social engagement), and some studies have not distinguished between types of networks (family, friends and formal groups). In particular, little research has investigated the influence of social connectedness on retirement planning and its association with retirement status. In addition, research has scarcely investigated the effect of time on the association between social connectedness and retirement status.

Even though some studies have included characteristics of the partner or the existence of family responsibilities (such as dependent children) in the study of retirement, the actual relationships with family members – or friends – have not been incorporated. The notable exception here is marital quality, which has received the most research attention. In addition, a few studies have included measures of frequency of contact, mainly with family members.

At the same time, there is a paucity of research in the area of trajectories of social connectedness in association with the process of retirement, particularly in Australia. Exiting the labour force is an important transition that affects many aspects of everyday

life. Therefore, it is expected that this significant transition would influence patterns of social connectedness in later life. Additionally, differences between males and females have not been reported in most studies, although retirement transitions and social connectedness show important differences by sex. In sum, there is a dearth of research focusing on the association between the different phases of the retirement process (planning, status, and transition) and indicators of social connectedness – including network structure, network quality, social support and formal social engagement. This is the focus of this thesis.

3.3.1. Theoretical approaches of this study

The predictors of retirement transitions can be grouped into three main categories: the economic feasibility of retirement, factors not under the control of older worker (such as ill health or retrenchment) and the disposition of individuals to exit the labour force (Szinovacz & DeViney, 2000). The focus of this study is on individuals' disposition to retire. The following discussion outlines the theoretical approaches employed in this thesis and explains how these approaches are used to understand the role of social connectedness in the process of retirement.

Three approaches provide the theoretical framework for this thesis: the life course approach, the trade-off between work and leisure, and socioemotional selectivity theory. First, retirement and its relation with social connectedness are situated within the context of the life course. The life course approach provides a useful framework to understand interrelated trajectories in people's lives. Elder describes the concept of life course as "the interweave of age-graded trajectories, such as work careers and family pathways, that are subject to changing conditions and future options, and to short-term transitions ranging from leaving school to retirement" (Elder, 1994, p. 5). The life course approach encompasses four main themes: 'lives and historical times', 'the timing of lives', 'linked lives' and 'human agency'. 'Lives and historical times' refers to the historical period individuals live in and the effects that exposure to this particular time can have on individual life courses. In the particular historical time that we live in, retirement is a social institution (Atchley, 1982). This means that there are institutionalised rules and expectations about retirement which are assumed to be universal, and the system of benefits (pension, superannuation, medical benefits, etc.) that governments have defined apply to all people in our society regardless of whether retirement actually occurs. The way retirement income and benefits are assigned is also specific to this moment in time, as this evolves over time (as discussed in Chapter 2).

Although ‘lives and historical time’ is not directly examined in this thesis, it is acknowledged that the rules concerning retirement income and benefits, in interaction with individual working histories and social perceptions of retirement, will influence the decision to retire and the way retirement is experienced. Therefore, it is important to keep the historical time in mind when examining the process of retirement.

‘Timing of lives’ refers to the social meaning of age. As defined by Elder (1994), “social timing refers to the incidence, duration, and sequence of roles, and to relevant expectations and beliefs based on age” (p. 6). In the case of retirement in Australia, the statutory retirement age is 65, although most Australians retire earlier than this, as discussed in Chapter 2. The social meaning of retirement age is important, as it justifies retirement as socially acceptable for older adults and validates the role of ‘retiree’. This has been demonstrated by research on mental health and retirement, which shows that retired men below the conventional retirement age of 65 (in Great Britain and Australia) had higher rates of mental health problems relative to both men of the same age who were in the labour force or older men (above 65) who were retired (Gill et al., 2006; Melzer, Buxton & Villamil, 2004). Melzer and colleagues also established that the rate of mental health problems was not related to age at retirement, but to current age. These authors suggested that this was probably related to the social acceptability of retirement after the conventional retirement age of 65 (Melzer et al., 2004).

‘Linked lives’ is the most important principle of the life course approach. This principle recognises the importance of individuals’ social embeddedness and the interaction of different social worlds (e.g., family, friends, co-workers) over the life course. This concept is the most relevant for this thesis because it highlights the interrelation between retirement and social connectedness in the present, which is the result of a history of interaction between life spheres over the life course.

The last concept, ‘human agency’, refers to how individuals plan and make choices over their life course. This is an important concept for this study, since the meaning of social connectedness constructed over time and how much of an incentive it is for retirement are the result of a series of choices and plans that individuals have made over their lifetime. The concept of ‘human agency’ highlights that people “are not passively acted upon by social influence and structural constraints. Instead, they make choices and compromises based on the alternatives that they perceive before them” (Elder, Johnson, & Crosnoe, 2003, p. 11).

Using these concepts from the life course perspective, it is expected that people's past experiences and history of relationships and linked lives, in addition to the interaction of life spheres – such as work and family – and individual agency will contribute to the formation of a social network with particular characteristics in terms of structure, function and quality, and will influence people's propensity for and interest in social connectedness. In addition, contextual factors such as being male or female also play an important role in the experiences and history of social relationships and the interaction between work and family and other social groups (e.g., Han & Moen, 1999; Moen, 1996; Loh & Kending, 2013). That is to say, it is essential to take into account the gendered nature of the life course (Moen, 2001). The life course perspective provides a useful background to understand how different life spheres interact over time and how individuals actively construct their present and future, in their interaction with others and their society throughout their life.

The second theoretical approach used in this study is based on the trade-off between work and leisure. Economists have focused on models of labour supply in which they assume people maximise their utility by making an optimal decision between the returns in income from staying in the labour force for longer and the value of their leisure time. Research has shown that, on average, the marginal utility of leisure increases as people get older (Schirle, 2008). According to these models, older workers weigh up the costs and benefits of continuing or leaving the labour force (e.g., Warren & Oguzoglu 2010). However, this perspective does not take into account the family context and non-financial individual preferences. In this thesis, the work-leisure trade-off is conceptualised in terms of the incentives and disincentives that the extent and quality of social connectedness bring to retirement relative to remaining at work at older ages. In other words, high levels of connectedness, in the form of larger network structures, good quality networks, availability of support and formal social engagement, are considered an incentive to retire.

In the third approach, socioemotional selectivity theory provides a framework for understanding why the value of social connectedness is likely to increase at older ages. This theory proposes that as people get older, they perceive time as increasingly limited. As a result, older people tend to change their focus from future-oriented goals, such as knowledge acquisition, towards maximising emotional meaning in the present (Lang & Carstensen, 2002). This is achieved by maintaining meaningful close relationships and by focusing on activities that provide emotional satisfaction (e.g., Carstensen, Fung, &

Charles, 2003). Although the focus of this theory is to understand changes in social motivation and behaviour at older ages, it provides a relevant background for understanding social connectedness, work and retirement. In this context, it is expected that as workers get older, and perceive their remaining time as more limited, they will start to place greater value on the time they spend with close others and in meaningful activities that allow them to satisfy emotional goals. However, the present and future value of social relations and social participation in older adults' lives, as well as their value and attachment to their job, is to a large extent progressively built over the life course.

In sum, it is proposed that social connectedness and work trajectories interact with each other and influence each other during the life course. Individuals may choose to devote time and energy to their social connectedness and build strong relationships over time. As the possibility of retirement approaches, those who have built strong relationships are more likely to consider their social connectedness as an attractive alternative to their working lives (assuming there is always a trade-off). As these workers get older and start to perceive their future time as more limited, they would be more likely to increase their focus on their social connectedness (which provides emotional satisfaction in the present), and may plan or choose an earlier retirement. Therefore, combining these three approaches (the trade-off between work and relationships, socioemotional selectivity theory and the life course approach), it can be expected that present social connectedness together with changes in social motivation associated with the perception of time as limited, will influence older workers' retirement expectations and propensity to retire.

The main focus of this thesis is to identify the effect of social connectedness on the process of retirement. However, the association between retirement and social connectedness is hypothesised to be bi-directional. Besides current social connectedness potentially being an incentive for retirement, it is also likely that retirement will impact older adults' social connectedness. According to the convoy model, relationships are dynamic and change as a result of life-span and life course factors (Antonucci et al., 2010). That is to say, the convoy of social relations changes with growth and maturation – which the authors identify as individual life-span characteristics – as well as with changing roles and responsibilities – which the authors define as situational life course characteristics. In the present context, changes in the convoy of relationships can occur

during the process of retirement. Similarly, changes in social relations and activities could happen as older adults move through the phases of retirement (see Section 3.1.3).

3.3.2. Conceptual framework

The conceptual framework for this thesis was developed in the context of the theoretical approaches discussed in Section 3.3.1 and the review of the literature on retirement and social connectedness (Sections 3.1 and 3.2). Figure 4 presents the framework, showing the elements studied in this thesis and the hypothesised relationships among them. The elements and relationships in the conceptual framework are situated in the context of the gendered life course (Moen, 2001).

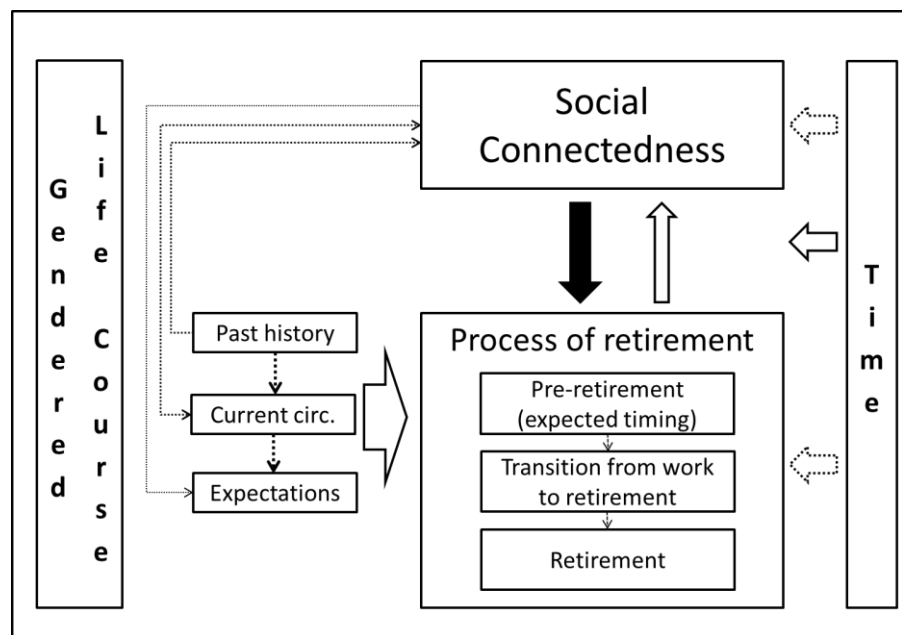
‘Social connectedness’ refers to an individual’s current social network structure, network quality, social support and formal social engagement. Based on reported differences in the roles of different types of networks (see Section 3.1.2), the roles of three types of networks are investigated: family, friends and formal groups.

The three elements on the left-hand side of Figure 4 represent individuals’ background characteristics, present circumstances and expectations about the future, and are associated with social connectedness and with the process of retirement. Regarding ‘past history’, elements such as education, health and financial circumstances and demographic characteristics such as age, sex and partnership status, provide the context in which social connectedness has been built and maintained over the life course. For example, older people tend to have smaller networks (Cornwell et al., 2008; Litwin, 2001) and report less frequency of contact than younger adults (Antonucci & Akiyama, 1987b). People with higher education usually have access to larger and more diverse networks (e.g., Fiori et al., 2006; Litwin, 2001; Windsor et al., 2016). Similarly, poor health can be a barrier for social participation (Li & Ferraro, 2005). In contrast, ill health may result in increased support received (Booth et al., in press). At the same time, these background and demographic characteristics are important in defining people’s labour force participation (McDonald, 2011).

Although sex is included as part of ‘past history’, it is also a defining element of people’s life courses and the retirement transition in particular (Kim & Moen, 2002; Moen, 1996). It is particularly important for this study because of its influence on social connectedness and retirement transitions. For instance, older females have larger and more diverse networks than males (Antonucci & Akiyama, 1987a; Windsor et al., 2016) as well as higher levels of social activity (Kendig, 1996, as cited in Warren, 2006). In

addition, females' labour force attachment over the life course is significantly different to males'. While generally males participate in the labour force continuously during their adult life, females experience more intermittent participation (Jefferson, 2009; Han & Moen, 1999). Being male or female "serves to shape the nature of one's occupation as well as the timing and duration of employment..." (Moen, 1996, p. 132). It is expected that the gendered nature of the life course will be reflected in the different associations between social connectedness and the process of retirement for males and females.

Figure 4. Conceptual framework



Taking a life course perspective, background and demographic characteristics would have played a role in defining older adults' 'current circumstances' (i.e., current health status, partnership status, financial well-being). At the same time, a bi-directional relationship between 'current circumstances' and 'social connectedness' is expected, as different spheres of life are interconnected. Age, partnership status, health and financial well-being are likely to influence social network structure, network quality, social support and formal social engagement. Similarly, 'social connectedness' is also expected to influence 'current circumstances'. For instance, a great amount of evidence shows a positive association between social connectedness and health. The beneficial effect of adequate networks and support on older adults' mental and physical health has been documented in many studies (e.g., Bowling & Grundy, 1998; Fiori & Jager, 2012; Litwin & Shiovitz-Ezra, 2011). Likewise, formal engagement, such as participation in groups and volunteer work, has also been shown to have positive effects on well-being outcomes at older ages (see Morrow-Howell, 2010 for a review). Another area of

influence is regarding network diversity. Diverse social networks can provide access to multiple resources (Granovetter, 1973). For example, network members can provide access to financial resources when needed, or facilitate employment opportunities.

Although the life course perspective focuses mainly on the important role of past history and experiences in the understanding of current transitions, the conceptual framework used in this thesis also incorporates expectations about the future. In this framework, ‘expectations’ refer to two aspects. First, the expected importance of reasons to retire for the future retirement decision is expected to influence retirement planning (this is considered in the analysis of retirement planning only). Second, in line with socioemotional selectivity theory, the perception of future time remaining in life influences people’s motivations to engage in different activities. In the context of a limited future time perspective, a lower preference for continued work is expected. The influence of subjective life expectancy on retirement planning has already been established in the literature (e.g., Griffin, Hesketh, & Loh, 2012). In the context of the conceptual framework, these expectations are influenced by ‘current circumstances’ and by ‘past history’ through ‘current circumstances’.

The associations of ‘past history’, ‘current circumstances’, and ‘expectations’ with ‘social connectedness’ are important for understanding the way social connectedness is constructed over the life course. However, these associations are not the focus of this thesis; therefore they are assumed and are not explicitly tested. Similarly, the influence of ‘past history’ on ‘current circumstances’ and of ‘current circumstances’ on ‘expectations’ are hypothesised but are not measured in the present study.

‘Current circumstances’ and ‘expectations’ are hypothesised to have a direct influence on expected retirement timing, which is measured in this study as subjective time to retirement and is situated in the context of Atchley’s pre-retirement stage (Atchley & Barusch, 2004). ‘Current circumstances’ and ‘past history’ are controlled for in the analysis, so that the direct influence of ‘social connectedness’ on expected retirement timing can be measured. Retirement status, retired versus not retired, is hypothesised to be influenced by ‘pre-retirement’, ‘past history’, ‘current circumstances’ and ‘expectations’. The influence of ‘past history’ and ‘current circumstances’ in terms of background and demographic characteristics are measured and controlled for in the analysis.

The black arrow in Figure 4 represents the effect of ‘social connectedness’ on the ‘process of retirement’. Based on the theoretical approaches, for older adults who had built strong social connections throughout their life course and, as a result, give greater value to their social connectedness, retirement is more likely to constitute an attractive alternative to work. In the context of a more limited future time perspective, which is more likely at older ages, there is an increased motivation to focus on emotionally meaningful relationships or, in this case, on social connectedness. Figure 4 shows a hypothesised direct influence of ‘social connectedness’ on the ‘process of retirement’. Having built and engaged with a valuable network over the life course is hypothesised to result in social connectedness playing a key role in these older adults’ lives. Assigning greater importance to social connectedness, together with a perception that time is becoming more limited, are likely to make retirement an attractive alternative to work potentially leading to earlier retirement. This mechanism – the black arrow linking ‘social connectedness’ with the ‘process of retirement’ – is hypothesised to operate in terms of retirement expectations and retirement status. It is expected that older adults who have higher levels of connectedness will plan to retire sooner compared with those adults with lower levels of connectedness. Likewise, it is expected that older adults with higher levels of connectedness will be more likely to be retired than those with lower levels of connectedness.

Another aspect of the conceptual framework is time. As discussed in the literature review, social connectedness changes over the life course. Time is also a relevant concept for the process of retirement, since pre-retirement, retirement and the transition from work to retirement occur over time. Based on the literature on ageing and social connectedness, it is hypothesised that the association between ‘social connectedness’ and the ‘process of retirement’ is likely to differ by age because the meaning of retirement and social relationships may be different at different stages in older adulthood. For example, the decision about leaving paid work could be socially more relevant close to age 65 (conventional retirement age), than in mid-adulthood (age 50-55) or in later adulthood (aged 75). Similarly, social connectedness at different ages is likely to have different characteristics. For example, 50 year-olds are more likely to have responsibilities for dependent children, while 75 year-olds are more likely to have caring responsibilities for elderly partners or siblings at the same time as having grandchildren to interact with (this is likely to be different for those unpartnered or childless). It is expected that social connectedness will have a stronger association with

retirement status for those aged 65. The differences in the association between social connectedness and retirement by age group are analysed cross-sectionally.

As previously mentioned, people's social connectedness can change over time. However, little research has examined this effect separately through the different phases of the process of retirement (i.e., pre-retirement, transition from pre-retirement to retirement, and in retirement). One exception is a study by van Tilburg (2003) which examined retirees' and workers' social connectedness over time, but it only investigated network size and proportion of co-workers in the network. Growing older is likely to be experienced in different ways by those who are retired, those who are still working and those who are moving from work to retirement. Similarly, social connectedness is likely to be experienced in different ways by those who are retired, those who are still working and those who are going through the retirement transition. The conceptual framework hypothesises a different effect of time on social connectedness in the three phases of retirement: pre-retirement, transition from pre-retirement to retirement, and retirement.

Even though the main focus of this conceptual framework is on the effect of social connectedness on the process of retirement – as shown by the black arrow in Figure 4 – it was acknowledged in the discussion of the theoretical approaches (Section 3.3.1) that the relationship between social connectedness and the process of retirement is likely to be bi-directional (as shown by the white arrow in Figure 4). The convoy model and Atchley's retirement phases, as well as the review of the literature, suggest that change in some aspects of social connectedness can be expected during the retirement transition. Potential changes will be examined by observing social connectedness throughout the pre-retirement and retirement phases. Although no attempt is made to identify phases of retirement, different aspects of social connectedness may show patterns that are consistent with the phases of retirement outlined by Atchley and Barusch (2004) presented in Section 3.1.3.

This conceptual framework illustrates how social connectedness and the process of retirement interact and the mechanisms by which they influence each other. The conceptual framework is situated within the broader context of the gendered life course (Moen, 2001), and takes into account the possible influence of time on the relationship between social connectedness and retirement. It also aims to cover multiple aspects of the retirement process, at the same time as incorporating social connectedness in each stage. In this way, this thesis provides an overview of the relationship between social connectedness and the process of retirement from a number of complementary

perspectives. These different perspectives are captured by the research questions presented in the next section. Although the conceptual framework in Figure 4 shows all the associations that are hypothesised to be important, only a subset of key relationships are within the scope of this thesis (see Section 3.3.3).

3.3.3. Research questions and hypotheses

The overarching aim of this study is to identify the role of social connectedness in the process of retirement. Four specific research questions were derived from the conceptual framework (Section 3.3.2). These research questions address complementary aspects of the association between social connectedness and the process of retirement:

1. What is the role of social connectedness in predicting subjective time to retirement?

This research question investigates the effect of social connectedness on subjective time to retirement, controlling for ‘past history’, ‘current circumstances’ and ‘expectations’. According to the theoretical approaches and the mechanisms outlined in the conceptual framework, it is expected that people with higher levels of connectedness will plan an earlier retirement. Similarly, it is expected that people who lack connectedness will plan a later retirement. Based on the literature on sex differences in social connectedness which shows larger and more integrated social networks among females (e.g., Antonucci & Akiyama, 1987a), it is expected that a greater variety of social connectedness indicators will influence subjective time to retirement among females than males.

2. What are the associations between social connectedness and retirement status?
Does this association differ by age group?

This research question examines the effect of social connectedness on retirement status, controlling for ‘past history’, ‘current circumstances’ and ‘expectations’. It is hypothesised that higher levels of connectedness make retirement an attractive alternative and thus make retirement more likely to happen (or lack of connectedness will reduce the likelihood of retirement occurring). Therefore, it is expected that retirees will have higher levels of connectedness than workers (in circumstances where there is choice). Due to the fact that females tend to have larger networks and generally experience more interaction between life spheres over the life course (work and family) it might be expected that social connectedness will be more strongly associated with

retirement status among females than males. Age differences are also expected, as the context of retirement and of social connectedness varies by age. It is expected that the effect of social connectedness on retirement status will be more important for those close to age 65 – which is the conventional retirement age for this cohort.

3. Do differences in social connectedness by retirement status change over time?

The literature review established that social connectedness characteristics differ by age and change over time as people get older (e.g., Shaw et al., 2007; van Tilburg, 1998). It is unknown, however, whether the effect of time is the same for people who are retired as it is for those who are still working and those who go through the transition from work to retirement. To fully assess the mechanism behind the differences in social connectedness by retirement status, longitudinal data are required. This research question investigates trends in social connectedness across three retirement statuses: worker, worker who retired and retiree – during an 11-year observation period. These three statuses represent the pre-retirement phase, transition from pre-retirement to retirement and the retirement phase. The longitudinal nature of the data allows the investigation of those who transition from work to retirement separately and their comparison with those who stay at work and those who remain retired.

In terms of the conceptual framework, this research question focuses on differences in social connectedness over time across the phases of retirement. This analysis is conducted separately for males and females. If higher levels of social connectedness increase the probability of retirement, as suggested in the second research question (above), it is expected that retirees would have higher levels of social connectedness. However, due to the likely bi-directional association between social connectedness and retirement, differences in social connectedness by retirement status could be due to retirement from the labour force. This analysis will show if social connectedness decreases, is maintained or increases over time for people in different phases of the retirement process and will shed light on when the differences in social connectedness were originated. It is expected that the effect of time will be different for people in different phases of the process of retirement.

4. How does the process of retirement affect social connectedness?

This research question looks at the effect of the process of retirement on social connectedness. Specifically, it investigates social connectedness throughout the different phases of retirement. Based on the literature review, change in frequency of

activities can be expected, as well as an increase in quality of relationships. It is also possible that formal social engagement will increase with retirement as the role of worker can be replaced by the volunteer role. The family and friend network structures could increase as there is more leisure time availability in retirement. The literature provides no evidence to expect changes in social support. These possible changes are examined in the context of the phases of retirement and are analysed separately for males and females.

The next chapter provides an explanation of the data and methods used in this thesis to investigate these four research questions.

4. Data and methods

Chapter 3 showed that many aspects of social connectedness have not been incorporated in the study of the process of retirement. The research gap presented in Chapter 3 highlighted the lack of research incorporating multiple indicators of social connectedness (such as networks structure, network quality, social support and formal social engagement) and different types of networks (such as family, friends and formal groups) in the study of the process of retirement, including retirement planning in the pre-retirement phase, retirement status in the retirement phase and transition from pre-retirement to retirement. The conceptual framework presented in Section 3.3.2 suggested that social connectedness will contribute to predicting subjective time to retirement, will be associated with retirement status and will also be influenced by the retirement transition. The current chapter outlines the data and methods used to address this research gap.

Two data sources are used in this thesis: The Social Networks and Ageing Project (SNAP) survey and the Household, Income and Labour Dynamics in Australia (HILDA) survey. This chapter first provides information on these data sources and explains the content of the surveys and measures used. Then, an overview of the statistical analyses used throughout the thesis is provided. The last section of this chapter discusses the relative strengths and weaknesses of each dataset in addressing the research questions. Further details on the analytical samples and measures exclusive to a specific piece of analysis will be provided in the relevant results chapter. All analyses were conducted in Stata 12.

4.1.Data

4.1.1. SNAP survey

The SNAP survey is part of a project³ which collected national data from 2,122 members of National Seniors Australia, an advocacy organisation for adults aged 50 years and over. The survey covered a number of areas including social networks,

³ This study is funded by an ARC Linkage grant -LP0990974 "The role of online social networks in successful ageing: benefiting from 'who you know' at older ages" (H. Booth, R. Ackland and T. Windsor; 2009-2012) in collaboration with National Seniors Australia Productive Ageing Centre. This research was approved by the Australian National University Human Research Ethics Committee (Protocol 2009/360).

subjective well-being, retirement and a number of socio-demographic characteristics. This thesis analyses the first wave of data, which was collected in late 2010-early 2011.

A dual sampling frame was generated according to members' mode of communication with National Seniors Australia: email or postal. The sample was stratified by age (in ten-year brackets: 50, 60, 70, 80) and sex, and invitations to participate were sent to a random selection of members (10,000 email invitations and 2,500 postal invitations). Age-sex-matched substitutes were selected to avoid sending invitations to both partners when both were National Seniors Australia members. In the cases where partner members shared the same email address or postal address, participants were asked to randomly select the respondent based on the most recent birthday. Both samples were given the opportunity to respond via the other method. The response rate in the first wave of data collection was 17%. Forty-six per cent returned the mail-out questionnaire while 54% responded online. No differences in terms of socio-demographic characteristics were identified between samples (for details on sampling method, see Booth and the SNAP Team, 2013). This first wave of data collection resulted in a total of 2,122 participants aged between 50 and 90 years ($M = 65.0$, $SD = 8.10$).

Measures of social connectedness

Chapter 5 presents analyses of social connectedness and subjective time to retirement, while Chapter 6 presents analyses of social connectedness and retirement status, both using the SNAP data. This section provides information on the measures used in these two chapters.

Network structure. A measure of network structure was generated from three questions about the level of contact with non-co-resident adult family members and friends. The first question asked "How many individual family members, who do not live with you, did you spend time with in the past 4 weeks?". Responses ranged from 1 to 5, including '1', '2 or 3', '4 to 6', '7 to 10' and '11 or more'. The second question asked "On how many different occasions did you spend time with these family members in the last 4 weeks?". The responses were 1 'once in the last 4 weeks', 2 '2 or 3 occasions', 3 '4 to 6 occasions', 4 '7 to 10 occasions', and 5 '11 or more occasions'. The last question asked "How long did you spend with these family members in total in the last 4 weeks?". The responses were 1 'less than 1 hour', 2 '1 hour to less than 5 hours', 3 '5 hours to less than 10 hours', 4 '10 hours to less than 20 hours', and 5 '20 hours or more'. These three items were averaged to form a measure of family network

structure. Participants who reported no face-to-face contact with non-co-resident family members in the last four weeks were given a score of 0. The same three questions were asked in relation to face-to-face contact with friends and were averaged to form a measure of friend network structure. Both scales showed good internal consistency (family network structure $\alpha = 0.84$, friend network structure $\alpha = 0.91$). The scales were later recoded to categorical variables with three categories in order to identify possible non-linear associations between network structure and retirement. Mean scores equal to 0 and lower than 2 were classified as 'small', mean scores equal to 2 and lower than 4 were classified as 'medium', and mean scores equal to 4 and higher were classified as 'large'.

Network quality. Three items adapted from Schuster, Kessler, and Aseltine (1990) were included in the questionnaire to assess the frequency of negative social exchanges with family, and separately, with friends. The items measuring negative social exchanges included "How often do adult family members who do not live with you/your friends make too many demands on you", "... Criticise you" and "... Create tensions or arguments with you". Since family and friends tend to play different roles at older ages (e.g., Antonucci & Akiyama 1987b; Seeman & Berkman, 1988), separate scores were calculated for social exchanges with family and friends. Correlations among items showed that the item "... make too many demands on you" did not correlate as highly with the other two negative items (0.43 and 0.47 compared with 0.66 for family items; 0.44 and 0.48 compared with 0.61 for friends items). Therefore, this item was excluded from the scale. The final scales consisted of the mean score of the two relevant items and showed good internal consistency (negative social exchanges family $\alpha = 0.80$; negative social exchanges friends $\alpha = 0.75$). In light of the stronger and longer-lasting effect of negative social exchanges on well-being compared with positive social exchanges (Newsom, Nishishiba, Morgan, & Rook, 2003) only negative social exchanges are included in the analyses.

The quality of the relationship with neighbours was measured with the question "How emotionally close do you feel to your immediate neighbours?". Responses ranged from 0 to 10, with 0 being 'extremely distant' and 10 'extremely close'. The responses were recoded into a binary variable in order to identify the absence or presence of a meaningful relationship. Those with responses between 7 and 10 were classified as having a close relationship.

Social support. Social support measures are based on the questions “In the last four weeks, how many adult family members, who do not live with you assisted you to do something practical?” and “In the last four weeks, how many of your friends assisted you to do something practical?”. Responses ranged from ‘0’ through ‘1’, ‘2’, ‘3’, ‘4’, ‘5-6’ to ‘7+’. Responses were recoded into three categories according to the size of the support network: those who answered ‘0’ or ‘1’ were coded ‘small’, those who responded ‘2’ or ‘3’ were coded ‘medium’ and those who responded ‘4’ and over were coded ‘large’. This categorical variable was used in order to examine non-linear associations. These items were adapted from the Lubben Social Network Scale (LSNS), which was designed to measure perceived support from family and friends (Lubben, 2002). In the present study, the measure accounts for the number of people who have provided support, as opposed to the number of people who could provide support.

Formal social engagement. Two measures of formal social engagement were included in the analysis: participation in group activities and participation in voluntary work. These variables aim to identify formal social participation. The question was worded “Spending time together with people in group activities. Include any activity involving a group of individuals who you do not generally consider as friends, such as participating in a language class, committee meeting, gym class, team sport, choir, or church service. Do not include time spent at work. In the last 4 weeks, how long did you spend in group activities?”. Responses ranged from ‘I did not attend any group activities’ through ‘less than 1 hour’, ‘1 to 5 hours’, ‘5 to 10 hours’, ‘10 to 20 hours’ to ‘21 or more hours’. The distribution of the responses was highly skewed because 31% of the sample did not attend any group activities. Therefore, these responses were recoded to a binary variable with those who did not spend time in group activities coded 0 and those who spent any amount of time in group activities coded 1.

In order to identify participation in formal volunteering, that is, as an organised structured activity within an organisation, participants were asked “In the last 12 months did you do any unpaid voluntary work with an organisation or charity?”. Participants who responded ‘yes’ were coded 1 and those who responded ‘no’ were coded 0. Frequency of voluntary work participation was available as a categorical variable in the dataset, but the use of a binary variable was preferred since 54% of the sample reported not participating in voluntary work in the last 12 months.

Control variables: ‘past history’ and ‘current circumstances’

Demographic characteristics. A number of demographic characteristics have been found to be associated with retirement transitions (see Chapter 3). Age, partnership status and self-rated health are included in the analysis of SNAP data. Age is used as a continuous variable and measured in years. Age is centred at 65 in those analyses where aged squared is included (Chapter 5). Partnership status in the SNAP questionnaire provided five alternatives: ‘living with spouse (married)’, ‘living with de facto partner’, ‘in a relationship, but not living together’, ‘not in a relationship, and that’s fine’, and ‘not in a relationship, but would like to be’. The responses were recoded to 1 ‘lives with partner’ and 0 ‘does not live with partner’.

Health. Self-rated health was assessed with the question “In general, would you say your health is...?” 1 ‘excellent’, 2 ‘very good’, 3 ‘good’, 4 ‘fair’ and 5 ‘poor’, and it is used as a continuous variable. Self-rated health is used as it is considered a comprehensive measure of human health status (Jylhä, 2009). Several longitudinal studies have shown that a global measure of self-rated health is a consistent independent predictor of mortality (for a review, see Idler & Benyamini, 1997).

Socio-economic characteristics. Participants’ highest level of education was reported in the following categories: ‘no school certificate or other qualification’, ‘school or intermediate certificate (or equivalent)’, ‘higher school or leaving certificate (or equivalent)’, ‘trade apprenticeship’, ‘certificate/diploma (e.g., child care, technical)’, and ‘university degree or higher’. The responses were reduced to four categories for the purpose of the analysis: ‘university’, ‘certificate/diploma’, ‘higher school/trade apprenticeship’, and ‘intermediate/no school certificate’. A measure of occupation was available in the dataset. The categories were ‘labourer or related’, ‘sales and services’, ‘trades and skilled work’, ‘administration/clerical’, ‘professional/academic’, ‘management’, ‘not applicable, and ‘other’. Preliminary analyses using occupation and education indicated that education was significantly associated with subjective time to retirement and retirement status, while occupation was not. Therefore, education only was kept in the models. No other information about job characteristics was available.

Wave 1 of the SNAP survey did not include direct measures of income. Therefore, a proxy measure for the socio-economic situation was used. Respondents were asked to indicate their agreement or disagreement (from 1 ‘strongly disagree’ to 5 ‘strongly

agree’) with the statement “I am comfortable with my standard of living”. Responses are used as a continuous variable in the analysis.

Control variables: ‘expectations’

Subjective life expectancy. Respondents were asked to complete the sentence “I think I will live to the age of...”. A measure of subjective remaining life expectancy (Ziegelmann, Lippke, & Schwarzer 2006) was calculated by subtracting current age from expected age at death. Although this measure was moderately negatively correlated with age ($r = -0.61$), there were no differences in the results when excluding this measure from the analyses.

Reasons to retire. Potentially important reasons to retire show the priorities and concerns that older workers have in relation to their future retirement decisions. Respondents rated 14 possible reasons to retire based on the importance that these would have on their future decision to retire. Preliminary analysis identified six reasons that had significant effects on subjective time to retirement, after controlling for covariates in a multiple regression analysis. The list of 14 reasons included in the questionnaire is presented in Appendix 1.

The reasons included in the analysis are ‘personal health problems’, ‘want to spend more time with family’, ‘job too stressful’, ‘want to pursue other activities’, ‘need to care for sick/disabled family member’ and ‘job loss and unable to find another’. These reasons represent non-financial aspects of respondents’ future retirement decision. Responses ranged from 1 to 5, with the following alternatives: 1 ‘not at all important’, 2 ‘not very important’, 3 ‘somewhat important’, 4 ‘important’, and 5 ‘very important’. Responses were recoded into a binary variable, in which codes 1, 2 and 3 were recoded to 0 ‘not important’ and codes 4 and 5 were recoded to 1 ‘important’. A binary variable was used in order to discriminate between respondents for whom these reasons were relevant and those for whom they were not – as opposed to the degree of importance of each reason.

Data limitations

Since the data was drawn from the membership of National Seniors Australia, it is not representative of the Australian population. Compared with the Australian population, the sample showed higher levels of education, but a similar profile in terms of marital status. In terms of the age distribution, the group aged 65-69 was over-represented,

while the youngest (50-54) and the oldest (80 and over) age groups were under-represented. Nevertheless, all analyses control for socio-demographic variables that are known to influence retirement and social connectedness, including age and education.

4.1.2. HILDA

HILDA is a household-based panel study which started its first wave of data collection in 2001. The survey is funded by the Australian Government Department of Social Services and is managed by the Melbourne Institute of Applied Economic and Social Research. In Wave 1, a sample of households was selected from all members of private dwellings in Australia (for exceptions see Summerfield et al., 2013) using a multi-staged approach. This method involved sampling 488 Census Collection Districts (CDs), followed by selecting between 22 and 34 dwellings from each CD – based on expected response rates and occupancy rates in each CD – and finally up to three households were selected within each dwelling (see Watson & Wooden, 2002 for more details on the sampling methodology). In Wave 1, 7,682 households and 19,914 individuals were interviewed. In Wave 11, 2153 households were added to the sample in order to retain cross-sectional representativeness. Adults residing in each sampled household are interviewed face-to-face once a year. Additionally, a self-completed questionnaire is provided. The questionnaire collects information on family dynamics, labour force participation, and economic and subjective well-being. In addition, each wave includes modules dedicated to specific topics of interest. This thesis uses the first 11 waves of data (2001-2011; for more information on the data collection process and the rules for following participants, see Summerfield et al., 2013).

For the purpose of the study of retirement, and to be consistent with the SNAP sample, only participants aged 50 and over ($n = 2,549$; 45.4% male and 54.7% female) are considered in the analyses ($M = 61.0$, $SD = 8.1$). Characteristics of the analytical samples specific to each analysis will be discussed in the relevant sections of Chapter 7.

Measures of social connectedness

The results from the analyses conducted using HILDA data are presented in Chapter 7 (see below for details). The same social connectedness indicators are used in both analyses and are obtained from questions in the self-completed questionnaire. The social connectedness indicators are described below.

Network structure. A specific measure of network structure was not available in HILDA. However, frequency of social activities with family and friends provides information about one aspect of network structure which is frequency of contact. This measure is taken from the question “How often do you get together socially with friends/relatives not living with you?”. The responses range from 1 ‘every day’, through ‘several times a week’, ‘about once a week’, ‘2 or 3 times a month’, ‘about once a month’, ‘once or twice every three months’, to 7 ‘less often than once every three months’. The responses were recoded so that higher numbers reflect higher frequency of contact. This variable is used as continuous in the analysis.

Network quality. Network quality is measured with questions about satisfaction with relationships. These questions refer to the relationship with a number of individual family members such as partner, former partner, parents, step children, etc. Relationships with partner and children are included in the present analysis, since quality of marriage (e.g., Szinovacz & DeViney, 2000) and contact with children (e.g., Szinovacz et al., 2001) have shown significant associations with retirement in previous research. Responses were in an 11-point scale, ranging from 0 ‘completely dissatisfied’ to 10 ‘completely satisfied’. These variables are used as continuous in the analyses.

Social support. Ten items in the self-completed questionnaire refer to individuals’ social support. Respondents were asked “The following statements have been used by many people to describe how much support they get from other people. How much do you agree or disagree with each?”. Exploratory factor analyses showed that a number of items did not load to any factor. In addition, conceptually not all items were related with support as defined in the literature review (e.g., ‘I seem to have a lot of friends’, ‘I often feel very lonely’). After progressively excluding the items that did not clearly load to any one factor, a solution of two factors was obtained. The original items were rated with a 7-point Likert scale from ‘strongly disagree’ to ‘strongly agree’. Scales were reverse coded when appropriate so that higher scores reflected higher support. The first factor, *availability of support*, contains the items ‘I don’t have anyone that I can confide in’ and ‘I have no one to lean on in times of trouble’. The scores for these two items were averaged to obtain the availability of support score, which had good internal consistency ($\alpha = 0.82$). The second factor, *quality of support*, consisted of the mean score of three items: ‘I enjoy the time I spend with the people who are important to me’, ‘when something is on my mind, just talking to people I know can make me feel better’, and ‘when I need someone to help me out, I can usually find someone’. The quality of

support scale also showed good internal consistency ($\alpha = 0.76$). The two scales were used as continuous variables in the analysis.

Formal Social engagement. The question “How much time would you spend on each of the following activities in a typical week?... Volunteer or charity work (for example, canteen work at the local school, unpaid work for a community club or organisation)” was used to measure formal social engagement. This measure is used as a continuous variable in the analysis and it was not available in Wave 1.

Control variables ‘past history’ and ‘current circumstances’

Demographic characteristics. Living with partner was derived from the question about living arrangements. Twenty six different types of living arrangements are coded in the HILDA dataset (in addition to ‘not yet classified’). For the purpose of this analysis, living arrangement was recoded to 1 ‘living with partner’ and 0 ‘not living with partner’, since the presence of a partner is regarded as the important factor.

Caring responsibilities may have an effect on older adults’ opportunities for social engagement (e.g., Evandrou & Glaser, 2003). Participants reported the time spent caring for a disabled or elderly relative per week. This measure is used as a continuous variable and it was available from Wave 2 onwards. In addition, a time-variant variable indicating if a family member experienced a serious injury or illness in the past year was included in the longitudinal analysis of change in social connectedness during the process of retirement. This variable was coded 1 ‘yes’ and 2 ‘no’.

Socio-economic characteristics. The variable containing gross wages and salaries from the last financial year is used as a measure of socio-economic status. This is a derived variable constructed by the HILDA team and contains imputed values when missing (for details see the HILDA user manual Summerfield et al., 2013).

Health. Self-rated health and mental health were included in the analyses. Self-rated health was measured with the question “In general, would you say your health is” 1 ‘excellent’, 2 ‘very good’, 3 ‘good’, 4 ‘fair’, and 5 ‘poor’. The SF-36 mental health scale was also included. This ranges from zero to 100, where 100 is better mental health. In addition, respondents were asked at each wave if in the past year they had experienced a serious personal injury or illness. This variable was coded 1 ‘no’ and 2 ‘yes’, and was included as a time-variant variable in the analysis of change in social connectedness during the process of retirement.

Data limitations

The HILDA survey is a national representative household panel study and not a retirement or ageing study. Therefore, HILDA includes respondents aged 15 years and over. Only participants aged 50 and over were selected for this thesis. In addition, the sub-samples used in this thesis are highly specific in terms of their labour force participation and retirement transitions, to allow the study of the phenomena of interest. As a result, these sub-samples may not be representative of the population of older adults in Australia.

4.2.Methods of analysis

A number of statistical techniques are used throughout this thesis in order to answer the research questions. Two analytical techniques are used with the SNAP data, and two different techniques analyse the HILDA data. An overview of these techniques and how they answer the research questions is provided below. A standard level of significance is used ($p < 0.05$). When an alternative level of significances is used, this is indicated in the relevant tables.

4.2.1. SNAP

The first research question “What is the role of social connectedness in predicting subjective time to retirement?” is addressed using multiple linear regression with subjective time to retirement (i.e., age expects to retire completely – current age) as the dependent variable. Independent variables related to social connectedness include family network structure and friend network structure, family and friend network quality (frequency of negative exchanges) and formal social engagement (formal participation in group activities and voluntary work). The control variables described in Section 4.1.1 are included in the models. Consistent with previous findings of sex differences in work and retirement trajectories (e.g., Han & Moen, 1999; Jefferson, 2005; Moen, 1996) and social connectedness (e.g., Antonucci & Akiyama, 1987a), models of subjective time to retirement are constructed separately for males and females. Multiple regression is the appropriate method to answer this research question because it assesses associations between independent variables and a continuous dependent variable fitting a linear equation. That is to say, these models indicate how much variance in subjective time to retirement (dependent variable) can be attributed to

each indicator of social connectedness (independent variables). The word ‘predicting’ is used in the sense of the statistical model and does not necessarily indicate causation.

This is a cross-sectional analysis using a sub-sample of workers who stated age and expected retirement age in the first wave of the SNAP data collection. In addition to social connectedness, this analysis includes the importance of reasons to retire as predictors of subjective time to retirement. The associations of social connectedness with subjective time to retirement are evaluated after controlling for the importance of reasons to retire.

The second research question “What are the associations between social connectedness and retirement status? Does this association differ by age group?” is addressed using multiple logistic regression. Logistic regression is used to predict the odds of an event occurring relative to the odds of an event not occurring. In this case, the event of interest is retirement status. The dependent variable, therefore, is whether the person is completely retired or not. The independent variables include the social connectedness indicators and the models control for covariates. These models indicate whether the independent variables are associated with higher or lower likelihood of being retired. Social connectedness indicators include network structure, network quality, social support and formal social engagement. Due to the aforementioned sex differences in social connectedness and retirement transitions, logistic regressions are conducted for males and females separately. In light of the importance of context in understanding life course transitions and the ‘timing of lives’, models of retirement status are also constructed separately for four age groups: 50-59, 60-64, 65-69 and 70 and older. This analysis uses the first wave of the SNAP data and includes all participants whose working/retirement status could be clearly identified from their responses. For example, if a participant reported being completely retired and also reported doing paid work, that participant was excluded from this analysis. It is acknowledged that retirement transitions and retirement status are not always clear-cut, but in order to achieve interpretable results, it was decided to include only participants with a clear working/retirement status.

4.2.2. HILDA

Two research questions are explored using HILDA. The first one is “Do differences in social connectedness by retirement status change over time?”. Since this question involves the study of change, longitudinal data were required. Eleven waves of HILDA are used in this analysis. The statistical technique selected is a multi-level random effects model. A multi-level model is required for this analysis since there are two levels involved in the data: individuals and time. That is, each one of the eleven waves of data are repeated for each individual. The research question required identifying differences by retirement status (between-person level) at the same time as identifying change over time (within-person level). In addition, interaction effects between retirement status and time were explored to investigate whether the effect of time on social connectedness differed by retirement status. The dependent variable, therefore, was social connectedness. As six indicators of social connectedness were studied (network structure, formal social engagement, quality of relationship with partner, quality of relationship with children, availability of support and quality of support), six models were constructed for each sex. Each of these models indicated the association between retirement status – in this case retired, worker or worker who retired – and the relevant social connectedness indicator, as well as the associations between time and the relevant social connectedness indicators, controlling for covariates.

The last research question is “How does the process of retirement affect social connectedness?”. In order to answer this question, longitudinal data were required. In addition, to be able to examine the complete transition, that is, pre-retirement, retirement and post-retirement, it was required to observe participants’ social connectedness over a period covering both a number of waves before they retired and a number of waves after their retirement. Eleven waves of HILDA are used in this analysis, but the data had to be re-structured in order to answer the research question. Seven points in time were included. This process involved first identifying in which wave retirement was first observed for each participant (Figure 5). The three waves before retirement were defined ‘t-3’, ‘t-2’ and ‘t-1’, the wave where retirement was observed was defined ‘t’ (time 0 in the figures below), and the three waves after retirement were defined ‘t+1’, ‘t+2’ and ‘t+3’. Then, each of the independent variables and covariates, as well as indicators of social connectedness, were recoded accordingly. For instance, if a respondent retired between Wave 7 and Wave 8 (e.g., individual ID = 2 in Figure 6), the independent variables and covariates in Wave 5 correspond to ‘t-3’,

those in Wave 6 correspond to 't-2' and those in Wave 7 correspond to 't-1'. Wave 8 would represent 't' (time 0) and the three waves after retirement (waves 9, 10 and 11) would correspond to 't+1', 't+2' and 't+3' in the re-structured dataset. The sub-sample of respondents included in this analysis consisted of those who retired between waves 4 and 8, so that three waves of data before retirement and three waves of data after retirement were available.

Figure 5. Original data structure showing two individuals (ID = 1 and ID = 2)

ID	Wave	Working		ID	Wave	Working	
1	1	1	Pre- retirement	2	1	1	Pre- retirement
1	2	1		2	2	1	
1	3	1		2	3	1	
			Retirement	2	4	1	Pre- retirement
1	4	0	Retirement reported	2	5	1	
1	5	0	Post- retirement	2	6	1	
1	6	0		2	7	1	
1	7	0					Retirement
1	8	0		2	8	0	Retirement reported
1	9	0		2	9	0	Post- retirement
1	10	0		2	10	0	
1	11	0		2	11	0	

Note. 1 = working, 0 = retired.

Figure 6. Modified data structure showing two individuals (ID = 1 and ID = 2)

ID	Wave	Time	Working	ID	Wave	Time	Working
1	1	-3	1	2	5	-3	1
1	2	-2	1	2	6	-2	1
1	3	-1	1	2	7	-1	1
1	4	0	0	2	8	0	0
1	5	1	0	2	9	1	0
1	6	2	0	2	10	2	0
1	7	3	0	2	11	3	0

Note. 1 = working, 0 = retired.

Social connectedness indicators were observed three waves before retirement, at the time that retirement was reported and three waves after retirement. Retirement was defined as complete withdrawal from the labour force without returning to paid work during the observation period. Fixed-effect models were used in order to observe

individual-level change in social connectedness throughout the transition. This method allows for each individual to be its own control, that is, by looking at individual-level changes, these models control for individual heterogeneity (Singer & Willett, 2003). Time was used as a categorical variable. The three pre-retirement time points and the three-post retirement time points were then contrasted with the time where retirement was first observed. Pre-retirement and post-retirement levels of social connectedness were also compared. Time-variant covariates that could influence individuals' retirement transitions and their social connectedness were controlled for. The same six social connectedness indicators (network structure, formal social engagement, quality of relationship with partner, quality of relationship with children, availability of support and quality of support) were analysed here as dependent variables. Therefore, six models for males and six models for females are presented.

4.3.Comparison of data sources

HILDA and SNAP contain different measures of social connectedness. Although the four relevant aspects of social connectedness were measured in both datasets (i.e., network structure, network quality, social support and formal social engagement), the measures are different. Network structure was defined as the frequency of contact with network members. In SNAP, questions about number of people seen, number of occasions when people were seen and time spent with them were available for family (non-co-resident) and friends. In HILDA, in contrast, the relevant question available was "How often do you get together socially with friends/relatives not living with you?". This measure did not allow distinctions between family and friend networks and provided no information on network size.

The questions about quality of relationships in HILDA are more specific than the ones available in SNAP. Rather than asking about the relationship with family members in general, these questions refer to the relationship with a number of individual family members such as partner, former partner, parents, step children, etc. However, no information on quality of relationships with friends was available in HILDA, but it was in SNAP. In addition, instead of asking about negative social exchanges as it was the case in SNAP, the questions available in HILDA ask about satisfaction with the relationship.

Social support questions are also different. While SNAP asks about the number of people who have provided support, questions in HILDA ask about the level of

agreement with certain statements related to social support. In terms of formal social engagement, a binary variable was used to identify participation in voluntary work in SNAP, while HILDA provided a more detailed measure of hours per week. Measures of participation in organised group activities were not available in HILDA.

Although the four aspects of social connectedness are measured in different ways in each dataset, both provide valuable information. The strength of SNAP is that the study was designed to analyse social networks and successful ageing. Therefore, it contains more specific measures, particularly allowing distinguishing between the role of different types of networks, such as family, friends and formal groups. However, the cross-sectional analysis of SNAP does not allow the examination of retirement transitions or change over time.

HILDA is a household panel study. Since the focus is not on social relations, the measures available from HILDA are general and do not differentiate between networks of friends and family. However, HILDA offers the advantage of 11 years of longitudinal data, which allow the examination of change and transitions. It is also a strength of HILDA that voluntary work is measured in hours per week, allowing for a more detailed examination of trends.

SNAP differentiates family- and friend-related social connectedness indicators in their association with retirement planning and retirement status. HILDA, in turn, allows the investigation of change, with general measures of social connectedness. Comparisons between workers, retirees and workers who retired during the observation period as well as analysis of the different phases in the retirement process are made possible by the longitudinal nature of HILDA. The detailed measures provided by SNAP together with the longitudinal aspect of HILDA are complementary, and jointly allow for a more comprehensive investigation of social connectedness and the process of retirement.

The next three chapters present the analyses and results. Chapter 5 focuses on the first research question (What is the role of social connectedness in predicting subjective time to retirement?), Chapter 6 explores the second research question (What are the associations between social connectedness and retirement status? Does this association differ by age group?), and Chapter 7 addresses the third and fourth research questions (Do differences in social connectedness by retirement status change over time? How does the process of retirement affect social connectedness?).

5. Social connectedness and retirement planning

This chapter examines the first research question: What is the role of social connectedness in predicting subjective time to retirement? This research question is situated in the pre-retirement stage of the process of retirement. Retirement planning is operationalized in this thesis as subjective time to retirement (i.e., expected age at retirement – current age).

Current literature has examined factors associated with retirement planning, mainly using expected retirement age as the dependent variable. Specifically, elements of ‘past history’ in the conceptual framework, such as age, health status, financial situation and level of education, have been identified as significant factors predicting expected or planned retirement age (e.g., Knox, 2003; Sargent-Cox, 2012; Taylor & Shore, 1995). Less frequently, the importance of subjective life expectancy has been included, which is part of ‘expectations’ in the conceptual framework. Previous research has indicated a significant effect of subjective life expectancy on retirement planning (Griffin et al., 2012; Montalto et al., 2000; van Solinge & Henkens, 2010). In other words, respondents who expect to live longer, plan to work for longer.

Additionally, this chapter explores the association of reasons to retire with retirement planning. Perceived importance of reasons to retire is likely to reflect older adults’ motivations and potential expected restrictions to workforce participation – also part of ‘expectations’ in the conceptual framework. The importance of reasons to retire provides information on what is important for older adults when they think about their work and personal life, and how they balance their priorities between these two important aspects of their lives. These reasons also show what older workers are concerned about in terms of their future retirement. Previous research has shown the significant effect of some reasons to retire on expected retirement age. For example, Delpachitra and Beal (2002) found that the importance of ill health and the inability to find work as reasons to retire was associated with higher expected retirement age. Beehr and colleagues (2000) found that workers who stated that needing more time to care for someone was an important reason in their decision to retire, planned to retire later. These results suggest that without these constraints (e.g., ill health, lack of job

opportunities or caring responsibilities), these older workers would continue in the labour force.

Regarding social connectedness, older workers' network characteristics and formal social engagement are likely to reflect the interplay between work, family and social spheres and the long-term trajectories in their social convoys. In this context, factors such as family life and leisure pursuits are likely to play a role in the retirement process (e.g., Beehr, 1986; Wolcott, 1998; Feldman, 1994). To date, little research has focused on these factors and their influence on expected retirement timing.

In this context, this chapter investigates the influence of current social connectedness – indicators of network structure, network quality, and formal social engagement – on subjective time to retirement. Based on the theoretical approaches and conceptual framework discussed in Section 3.3, it is expected that higher levels of connectedness will predict shorter subjective time to retirement. In addition, due to the documented sex differences in social connectedness and labour force participation patterns, the role of social connectedness is expected to be more prominent among females.

5.1.Data and methods

This analysis uses subjective time to retirement as the dependent variable. This variable is calculated by subtracting current age from expected retirement age. Subjective time to retirement – rather than expected retirement age – is used in this analysis because it allows a better examination of the role of age. Subjective time to retirement is relatively independent of age ($r = -0.37, p < 0.001$), whereas expected retirement age is limited by current age, which explains a higher correlation ($r = 0.56, p < 0.001$). In other words, subjective time to retirement conceptually is not dependent on age, while expected age at retirement conceptually is dependent on age. In addition, the focus of this analysis was on distance – i.e., a period of time – and not on a fixed point in time.

The analysis of subjective time to retirement used the first wave [2010-2011] of the SNAP survey. The sample used for the analysis consists of 662 respondents (256 males and 406 females) who were working (part-time, full-time or self-employed), did not consider themselves retired at the time of the survey, and stated their expected retirement age (65 cases were missing on expected retirement age).

The mean age of this sample is 59.4 ($SD = 5.3$) and does not differ by sex. The average expected retirement age of this sample is 65.7 ($SD = 5.9$; min. 54 and max. 90), and it is

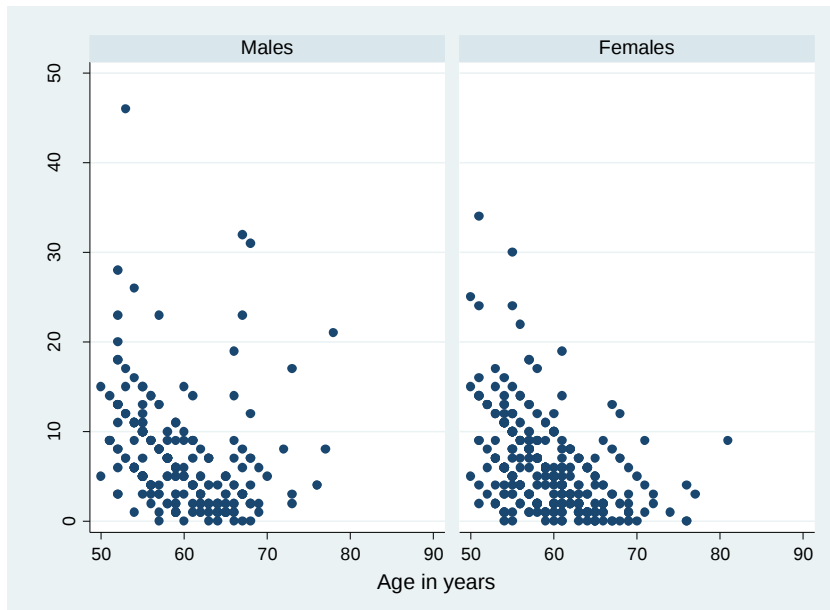
higher for males than for females (males: $M = 66.6$, $SD = 7.0$; females: $M = 65.2$, $SD = 5.1$; $p < 0.01$). Descriptive statistics for the control variables and subjective life expectancy are presented in Table 1 (mean and standard deviation for continuous variables and percentages for categorical variables). Figure 7 shows scatterplots of subjective time to retirement by age for males and females ($r = 0.28$ for males and $r = -0.46$ for females). The average subjective time to retirement for this sample is 6.3 years ($SD = 5.3$), and it is higher for males than for females (males: $M = 6.9$, $SD = 6.0$; females: $M = 5.9$, $SD = 4.7$; $p < 0.05$).

Table 1. Descriptive statistics control variables and subjective life expectancy

Characteristic	Males (<i>n</i> = 256)		Females (<i>n</i> = 406)		Total (<i>n</i> = 662)	
	<i>M</i> / %	<i>SD</i>	<i>M</i> / %	<i>SD</i>	<i>M</i> / %	<i>SD</i>
Age	59.6	5.6	59.3	5.1	59.4	5.3
Lives with partner (% yes)	87.6		62.2		72.2	
Self-rated health	2.3	0.8	2.3	0.9	2.3	0.8
Education (%)						
University	30.6		26.9		28.2	
Certificate/diploma	21.2		29.4		26.2	
High school/apprenticeship	25.5		17.5		20.5	
Intermediate/no school	22.7		26.2		25.0	
Satisfaction with standard of living	4.0	0.9	4.0	0.9	4.0	0.9
Work arrangements (%)						
Working full-time	66.0		45.1		53.2	
Working part-time	13.7		42.1		31.0	
Self-employed	20.3		12.8		15.8	
Subjective life expectancy	25.3	9.8	25.5	9.3	25.4	9.5

Source: SNAP.

Figure 7. Subjective time to retirement by age for males and females



Source: SNAP

Multiple regression analysis was used to identify the factors that significantly predict subjective time to retirement. Since evidence of heteroskedasticity was found, robust standard errors were used (Kohler & Kreuter, 2012). A number of outliers were also identified. Removing them from the analysis improved the diagnostics, but did not change the results. Therefore, the outliers are included in the final analysis. Regression models were run separately for males and females, as retirement transitions (e.g., Warren, 2008; Warren & Oguzoglu, 2010), reasons to retire (e.g., Moen et al., 2000; Warren, 2006) and social connectedness (e.g., Antonucci & Akiyama 1987a), have been reported to differ by sex. Cases with missing values were excluded analysis by analysis. Three models are presented for each sex. The first model contains the control variables, which are part of ‘past history’ and ‘current circumstances’ in the conceptual framework. The control variables include age centred at 65, partnership status, self-rated health, education, satisfaction with standard of living – as a proxy for financial circumstances – and employment arrangements. The first model also includes subjective life expectancy, which is part of ‘expectations’ in the conceptual framework. Few studies have included subjective life expectancy as a predictor of expected retirement age. However, in line with socioemotional selectivity theory, it is expected that having a more open-ended future time perspective – defined as longer subjective time to death (Ziegelmann et al., 2006) – is likely to lead to a longer expected time at work. Table 1 shows the descriptive statistics for the variables included in Model 1.

The second model incorporates a number of items about the importance of different elements for the decision to retire, which are part of ‘expectations’ in the conceptual framework. The six reasons included in the analysis are listed in Table 2. Reasons such as “job too stressful” and “wanting to spend more time with family” are examples of the items rated. As explained in Chapter 4 (Section 4.1.1) items were rated in the following scale: 1 ‘not at all important’, 2 ‘not very important’, 3 ‘somewhat important’, 4 ‘important’, and 5 ‘very important’. Responses were recoded into a binary variable, in which codes 1, 2 and 3 were recoded to 0 ‘not important’ and codes 4 and 5 were recoded to 1 ‘important’. Instead of using the degree of importance of each reason, using a binary variable allowed discrimination between respondents for whom these reasons were relevant and those for whom they were not. Table 2 shows the percentage of males and females who rated as ‘important’ each reason. Based on traditional gender roles and the differences in labour force participation and caring responsibilities of males and females over their life course, it is expected that work-related reasons will be more important for males’ retirement planning and family-related reasons will be more important for females’ retirement planning.

Table 2. Importance of reasons to retire for future retirement decision (% rated ‘important’)

Variable	Males	Females	Total
Personal health problems	56.5	60.3	58.8
Want to spend more time with family	58.7	64.0	61.9
Job too stressful	41.9	47.9	45.5
Want to pursue other activities	63.2	67.2	65.5
Need to care for sick/disabled family member	38.2	41.9	40.3
Job loss and unable to find another	34.6	42.7	39.4

Source: SNAP.

Model 3 incorporates social connectedness⁴. Table 3 shows the means and percentages for the social connectedness variables included in Model 3. Measures include network structure, network quality and formal social engagement⁵. Family network structure and friend network structure consists of the average of number of people (family or friends) seen in the last four weeks, number of occasions in which these people were seen, and time spent with them. This average was later categorized into large, medium and small network structure, in order to examine non-linear effects.

⁴ Because of missing data, Model 2 and Model 3 have fewer cases than Model 1.

⁵ Measures of social support from family and friends were included in previous models but none of them had a significant effect on subjective time to retirement for males or females, therefore they were excluded from the final models.

Three measures of network quality are included in Model 3. The first two measures are frequency of negative social exchanges with family and frequency of negative social exchanges with friends. These scales consist of the mean score of two questions about negative social exchanges (how often family/friends criticise you and how often they create arguments or tensions with you). These two scales are used in the models as continuous variables. The third measure of network quality is emotional closeness to neighbours. This measure is included since neighbours become increasingly important in older people's social networks as they age (Cutrona & Wesner, 2009). Respondents were asked "How emotionally close do you feel to your immediate neighbours?". Responses ranged from 0 to 10, with 0 being 'extremely distant' and 10 'extremely close'. Responses were recoded into a binary variable with 7-10 classified as having a close relationship and coded 1, and responses 0-6 classified as not having a close relationship and coded 0.

Two measures of formal social engagement are included in Model 3. The first measure consists of whether respondents have done any voluntary work in the last 12 months (0 'no', 1 'yes'). The second measure refers to participation in organised group activities in the last four weeks (0 'no', 1 'yes'; see Chapter 4, Section 4.1.1 for full details on the variables used). Descriptive statistics for social connectedness indicators are presented in Table 3.

Taking into account traditional gender roles and the differences in labour force participation and social connectedness between males and females, work is expected to be more important for males' identity than for females'; and males' career decisions are expected to be less influenced by personal relationships compared with females. Therefore, it is expected that social connectedness variables will have a stronger influence on subjective time to retirement among females relative to males.

Table 3. Descriptive statistics social connectedness variables

Variable	Males		Females		Total	
	<i>M / %</i>	<i>SD</i>	<i>M / %</i>	<i>SD</i>	<i>M / %</i>	<i>SD</i>
Family network structure (%)						
Small	27.6		20.7		23.3	
Medium	66.4		64.0		65.1	
Large	6.0		15.3		11.6	
Friend network structure (%)						
Small	27.8		18.1		21.8	
Medium	62.9		67.7		65.8	
Large	9.3		14.2		12.4	
Network quality						
Frequency negative exchanges family	1.8	0.7	1.9	0.7	1.9	0.7
Frequency negative exchanges friends	1.7	0.6	1.6	0.5	1.6	0.6
Emotional closeness to neighbour (% yes)	15.6		14.8		15.0	
Formal social engagement						
Does voluntary work (% yes)	34.9		33.0		33.7	
Participates in group activities (% yes)	56.8		60.1		58.6	

Source: SNAP.

5.2. Results multiple regression models subjective time to retirement by sex

Regression coefficients, robust standard errors and significance for males are shown in Table 4. The final model for males (Model 3) explains 42% of the variance in subjective time to retirement, $F(26, 171) = 4.16$; $p < 0.001$. Regarding the control variables, age, being self-employed (relative to being working full-time) and subjective life expectancy are significant in males' Model 3. Although the correlation between chronological age and subjective life expectancy (measured as expected age at death minus current age) is relatively high ($r = -0.62$), multicollinearity was not a problem in the model (according to the variance inflation factor for the independent variables, $VIF = 1.50$). In addition, models were constructed without subjective life expectancy and the results did not change. There is a significant quadratic effect of age indicating an initial decrease in subjective time to retirement until age 65.5 followed by an increase $[0.04/2(0.04) = 0.5 + 65, \text{ since age was centred at } 65]^6$. That is, among males, older age is associated with shorter subjective time to retirement – a negative effect – up to age 65.5. From this age onwards, the effects of age and age squared result in an increase in subjective time to retirement with increasing age. Previous research had also found that planned age at retirement increases with age (Montalto et al., 2000).

⁶ Value of age at which the slope is zero, $x = b_{(age)}/2*b_{(age)^2}$.

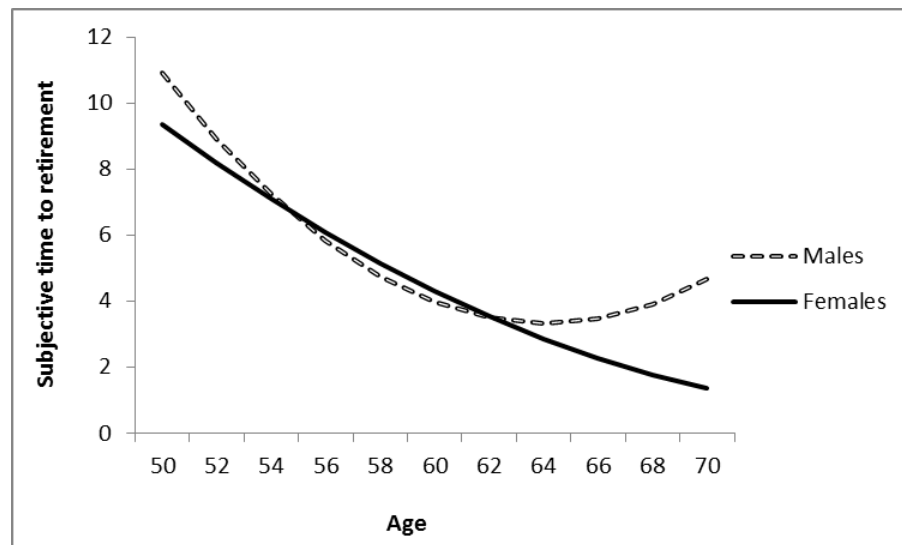
Model 3 shows that two of the reasons to retire have a significant effect: males who perceive “job too stressful” as important expect a shorter time to retirement than those who do not (2.1 years) and males who perceive “job loss and unable to find another” as important expect a longer time to retirement than those who do not (2.3 years).

Model 3 shows that most social connectedness indicators are not significant predictors of subjective time to retirement for male workers in this sample. Only one social connectedness variable has a marginally significant effect ($p = 0.053$). Males who participate in voluntary work expect to retire 1.73 years earlier than those who do not participate in voluntary work. Although mostly non-significant, social connectedness indicators, as a whole, contribute an extra 3% to the variance explained by the model.

Results for females are presented in Table 5. The variance explained by the models increases when including reasons to retire (9%), and increases further when including social connectedness indicators (7%). Model 3 is significant and explains 47% of the variance of subjective time to retirement for females, $F(27, 282) 8.3, p < 0.001$. There was no multicollinearity according to the variance inflation factor ($VIF = 1.48$). Age is significant among females in Model 3. Figure 8 illustrates the significant quadratic effect of age among males and the predominantly linear negative effect of age among females. Similar to the model for males, self-employment and subjective life expectancy have a significant and positive effect. The effect of subjective life expectancy, however, is small and it is around half of that for males ($b = 0.10$ and $b = 0.17$ for females and males respectively).

Partnership status in Models 1 and 2 showed that females living with a partner expect a shorter time to retirement than those not living with a partner, which is consistent with previous research. However, this variable was no longer significant after including social connectedness indicators.

Figure 8. Predicted values for subjective time to retirement by age (50 – 70) for males and females (based on Model 3)



Source: SNAP.

Table 4. Subjective time to retirement regression models males

Variable	Model 1		Model 2		Model 3	
	<i>B</i>	<i>Robust SE</i>	<i>B</i>	<i>Robust SE</i>	<i>B</i>	<i>Robust SE</i>
Age	0.00	0.09	-0.02	0.10	0.04	0.11
Age squared	0.04**	0.01	0.03**	0.01	0.04**	0.01
Lives with partner (ref: no)	-0.54	1.01	0.10	0.90	0.53	1.07
Self-rated health (1 excellent – 5 poor)	-0.37	0.42	-0.65	0.47	-0.46	0.60
Education (ref: University)						
Certificate/diploma	-1.92*	0.85	-1.95*	0.86	-2.16*	0.93
High school/apprenticeship	-0.62	0.79	-0.70	0.83	-0.93	0.95
Intermediate/no school	-0.27	1.00	-0.22	1.01	-0.25	1.09
Satisfied with standard of living	-0.06	0.33	-0.32	0.33	-0.07	0.37
Work arrangements (ref: works full-time)						
Works part-time	0.75	1.31	0.61	1.36	0.44	1.66
Self-employed	1.58	0.91	2.20*	0.89	2.74*	1.06
Subjective life expectancy	0.17*	0.07	0.17*	0.08	0.17*	0.08
Importance of reasons to retire (ref: not important)						
Personal health problems			-0.20	0.78	-0.40	0.89
Want to spend more time with family			-0.02	0.66	0.16	0.75
Job too stressful			-1.92**	0.61	-2.13*	0.70
Want to pursue other activities			-1.23	0.80	-1.43	0.93
Need to care for sick/disabled family member			0.43	0.95	0.49	1.03
Job loss and unable to find another			1.95*	0.98	2.25*	1.10
Family network structure (ref: medium)						
Small					0.23	0.82
Large					-0.58	1.10
Friend network structure (ref: medium)						
Small					-0.33	0.90
Large					-0.84	1.19
Network quality						
Frequency negative exchanges family					0.49	0.50
Frequency negative exchanges friends					0.42	0.72
Emotional closeness to neighbour (ref: no)					0.09	1.47
Formal social engagement						
Does voluntary work (ref: no)					-1.73 †	0.88
Participated in group activities (ref: no)					0.71	0.91
Intercept	1.64	2.49	4.20	2.49	1.32	3.19
	<i>n</i>	239		213		198
	<i>R</i> ²	0.31		0.39		0.42

Note. †0.05 < *p* < 0.06; * *p* < 0.05; ** *p* < 0.01. ref = reference category. Source: SNAP.

In terms of the reasons to retire, the importance of five of the six reasons is associated with subjective time to retire for females. Females who think that “personal health problems”, “job loss and unable to find another” or “need to care for sick/disabled family member” will be important for their decision to retire expect a longer time to retirement than those who do not (about one year). Females who rate “want to spend more time with family” or “want to pursue other activities” as important in their future decision to retire, expect a shorter time to retirement compared with females who do not (1.6 and 1.2 years respectively).

Regarding network structure, having a large network of family compared with a medium or small one (large versus small: $b = 1.20$, robust standard error = 0.63, $p = 0.058$) is associated with shorter time to retirement. In terms of quality of relationships, each additional point in frequency of negative exchanges with friends is associated with an extra year of subjective time to retirement. The opposite effect is found for frequency of negative social exchanges with non-co-resident family members, although the effect was larger for friends. This finding was unexpected since it was predicted that those with good quality relationships would plan to retire sooner. However, previous literature has shown that older adults face competing interests. For example, older adults with caring responsibilities are less likely to be employed (Vlachantoni, 2010) and work fewer hours (Moen & Flood, 2013). In line with these findings, follow-up analyses were conducted to examine whether the effect of negative social exchanges on subjective time to retirement was moderated by work arrangements. In order to test this moderation, an interaction term was included in the regression analysis (work arrangements⁷ x frequency of negative social exchanges with family). As illustrated by the predicted values in Figure 9, findings indicated that frequency of negative social exchanges with family had no effect on subjective time to retirement among those working part-time. In contrast, among those working full-time or self-employed, those with high frequency of negative social exchanges with family planned to retire 1.4 years earlier than those with low frequency of negative social exchanges (see Appendix 2 for table with regression coefficients). These results may be indicating that females who work more hours may be pressured by family members to retire sooner, for example, to care for ill or disabled parents, siblings or other relatives.

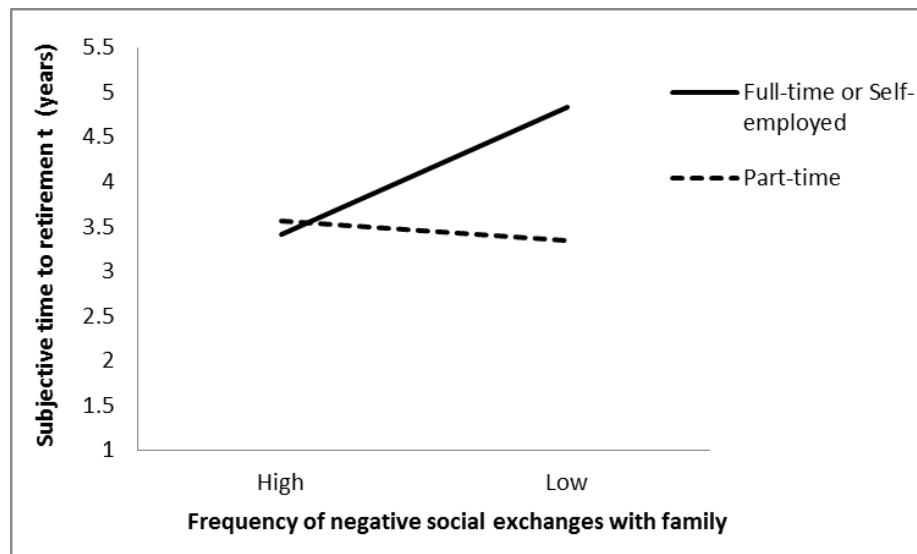
⁷ The variable work arrangements was recoded into a binary variable for the purpose of this analysis, 1 ‘part-time’ and 0 ‘full-time or self-employed’.

Table 5. Subjective time to retirement regression models females

Variables	Model 1		Model 2		Model 3	
	<i>B</i>	<i>Robust SE</i>	<i>B</i>	<i>Robust SE</i>	<i>B</i>	<i>Robust SE</i>
Age	-0.26**	0.04	-0.26**	0.05	-0.30**	0.06
Age squared	0.02**	0.01	0.01*	0.01	0.01	0.01
Lives with partner (ref: no)	-0.73	0.43	-1.02*	0.42	-0.60	0.43
Self-rated health (1 excellent – 5 poor)	0.06	0.28	-0.25	0.25	-0.30	0.26
Education (ref: University)						
Certificate/diploma	0.33	0.64	0.30	0.64	0.45	0.67
High school/apprenticeship	0.31	0.63	0.51	0.62	0.48	0.64
Intermediate/no school	-0.17	0.62	-0.13	0.61	0.30	0.61
Satisfied with standard of living	-0.80**	0.30	-0.52	0.29	-0.41	0.28
Work arrangements (ref: works full-time)						
Works part-time	-0.35	0.44	-0.02	0.42	-0.06	0.44
Self-employed	2.02*	0.88	2.44**	0.93	2.39**	0.88
Subjective life expectancy	0.08*	0.03	0.08*	0.03	0.09**	0.03
Importance of reasons to retire (ref: not important)						
Personal health problems			1.28*	0.50	1.23*	0.49
Want to spend more time with family			-1.35**	0.47	-1.64**	0.48
Job too stressful			-0.35	0.44	-0.24	0.43
Want to pursue other activities			-1.08*	0.42	-1.18**	0.44
Need to care for sick/disabled family member			1.09†	0.56	1.13*	0.54
Job loss and unable to find another			1.11*	0.55	1.17*	0.55
Family network structure (ref: medium)						
Small					0.29	0.59
Large					-0.91*	0.44
Friend network structure (ref: medium)						
Small					0.39	0.59
Large					0.55	0.48
Network quality						
Frequency negative exchanges family					-0.60*	0.28
Frequency negative exchanges friends					1.01*	0.44
Emotional closeness to neighbour (ref: no)					-0.60**	0.28
Formal social engagement						
Does voluntary work (ref: no)					0.54	0.50
Participated in group activities (ref: no)					0.23	0.42
Intercept	4.86	1.59	4.48	1.74	3.07	1.86
	<i>n</i>	371		330		310
	<i>R</i> ²	0.32		0.41		0.47

Note. †0.05 < *p* < 0.06; * *p* < 0.05; ** *p* < 0.01. ref = reference category. Source: SNAP.

Figure 9. Interaction effect frequency of negative exchanges family and work arrangements females (predicted values)



Source: SNAP

5.3. Discussion

This chapter has explored the first research question: What is the role of social connectedness in predicting subjective time to retirement? The role of social connectedness was examined while controlling for the variables of ‘past history’, ‘current circumstances’ and ‘expectations’. As expected, both perceived importance of reasons to retire and social connectedness indicators are significant predictors of subjective time to retirement for males and females. The results show that social connectedness has a greater influence on subjective time to retirement for females than for males.

‘Past history’ and ‘current circumstances’

Consistent with previous research on retirement planning, age is an important predictor of subjective time to retirement. Age has a linear negative effect for females. Specifically, the older female workers are, the shorter their subjective time to retirement. However, there is a quadratic relationship between age and subjective time to retirement for males; the negative effect of age on subjective time to retirement applies only until the age of 65.5. After that age, subjective time to retirement increases as people get older. This non-linear association among males suggests that some older adults, who have not retired at the conventional retirement age of 65 (Age Pension eligibility age), may plan to work for as long as possible. These workers may be in jobs

that provide the flexibility or the opportunity to continue working at older ages. In addition, research has shown that workers become more likely to be self-employed at older ages (McDonald, 2011). Self-employment, as discussed below, is also associated with later retirement (Borland & Warren, 2006). Older workers who did not retire by age 65 may be enjoying their work or having a second career and, therefore, planning a later retirement.

Previous research on retirement planning and age at retirement has found health to play an important role. Self-rated health did not have a significant effect in this analysis. Previous research that has found a significant effect of self-rated health on retirement planning has also included other measures of health. For example, the study by Sargent-Cox and colleagues (2012) also included a measure of difficulty with activities of daily living. The study by Taylor and Shore (1995) included a variable of whether respondents thought their health status would allow them to work for as long as they wanted to. In contrast, a study by Beehr and colleagues (2000) did not find a significant effect of self-rated health on expected retirement age. It is possible that the effect of self-rated health is only evident when controlling for other health measures. A direct, more objective measure of physical health issues that could affect the capacity to work may reveal a different effect.

In relation to partnership status, not being partnered has been previously found to be associated with higher planned retirement age (Knox, 2003; Sargent-Cox et al., 2012). These previous findings were not reflected in males' or females' subjective time to retirement, where no significant differences were observed between those living with a partner and those who do not live with a partner when social connectedness variables were taken into account.

Having enough financial resources for retirement is a strong predictor of retirement age (e.g., Hamilton & Hamilton, 2006; Humpel et al., 2009; Warren, 2006) and planned or expected retirement age (e.g., Knox, 2003; Sargent-Cox et al., 2012; Taylor & Shore, 1995). The proxy variable satisfaction with standard of living did not have a significant effect for males or females. Satisfaction with standard of living may not be directly related to older workers' financial security. In other words, the fact that they are or are not satisfied with their standard of living today is not related, in this study, to their anticipated resources for retirement. It is a limitation of this analysis that a more direct measure of financial resources was not available. Future research should incorporate

financial resources in the analysis of subjective time to retirement, for a more direct measure of financial capacity to retire.

With regards to education, males with a university degree expect to retire two years later than those with a certificate or diploma. It is possible that higher educational and occupational levels provide better job opportunities at older ages as older workers with higher levels of education are more likely to have access to more work and retirement options (Kim & DeVaney, 2005). In the same vein, Delpachitra and Beal (2002) found that higher education was associated with higher expected retirement age. However, in the present study, a linear association between level of education and subjective time to retirement was not observed. It is possible that the categories available in the education variable did not provide a good reflection of actual level of education. A linear measure of years of education may provide a better indication of respondents' educational level.

Regarding work arrangements, males and females who are self-employed expect a longer time to retirement than those who are not self-employed. Self-employed males and females expect to retire more than two years later than those working full-time. This result is consistent with previous research which has found that self-employment is associated with later retirement and later retirement planning (Borland & Warren, 2006; Mermin, Johnson & Murphy, 2007; Hochguertel, 2010). The flexibility and self-direction that self-employment provides older workers may be reasons for planning a later retirement. In fact, research suggests that work flexibility is an important factor in keeping older adults in the workforce for longer (Shacklock & Brunetto, 2005; Shacklock, Brunetto, & Nelson, 2009). In addition to the flexibility that self-employment may provide, it would be expected that self-employed older workers will show higher work commitment, which is also related to intentions to continue working (Patrickson & Ranzijn, 2004; Taylor & Shore, 1995).

Phased retirement is also associated with longer working lives (Knox, 2003). Self-employed older workers in the sample could be in bridging employment after leaving a career job as part of a transition to retirement. In fact, partial retirement is common among self-employed men in Australia (Warren, 2006). It is important to note, however, that the self-employed men in this sample did not define themselves as partially retired. These results highlight the importance of understanding retirement as a process.

‘Expectations’

Subjective life expectancy, calculated as subjective time to death, is a significant predictor of subjective time to retirement for males and females, consistent with previous research (Griffin et al., 2012; Montalto et al., 2000; van Solinge & Henkens, 2010). These coefficients show that longer subjective life expectancy is associated with longer subjective time to retirement. This finding is in line with the expectation that having a less open-ended future time perspective is likely to increase the value of retirement, leading older workers to want to retire sooner. However, the size of the effect is small. It is possible that the effect of subjective life expectancy on retirement planning is larger among older individuals, when socioemotional selectivity becomes more significant. A larger number of individuals in the older age group would be needed to explore this further; in the current sample, the majority of respondents are aged 60 years or younger.

As noted in Chapter 2, older workers face a series of constraints to workforce participation, which also influence their retirement options. Two important constraints are poor health and lack of job opportunities, which can ‘push’ older workers into retirement earlier than desired. In this study, females who rated “personal health problems” and females and males who rated “job loss and unable to find another” as important reasons to retire expect a longer time to retirement. It is important to note that although current self-rated health did not have a significant effect on subjective time to retirement, being concerned about future personal health problems was significant among females. Previous research has shown that females are more likely than males to mention personal health as a reason to retire (Moen et al., 2000). It is possible that the association of the importance of health problems and job loss with longer subjective time to retirement is due to these constraints becoming more significant at older ages. For instance, health problems that could affect the ability to work are more likely to arise at age 70 than at age 60. Older workers may also perceive that at older ages they are more likely to lose their job and not be able to find another. Consistent with the findings of this study, previous research has also found that rating ill-health and inability to find work as important reasons to retire is associated with higher planned retirement age (Delpachitra & Beal, 2000).

Results regarding job loss are consistent with the high rate of long-term unemployment among older workers. Unemployed older workers experience much longer spells of

unemployment than younger workers. For instance, based on ABS data, Adair and Temple (2012) reported that people aged 55 and over seeking employment had been unemployed for an average of 71 weeks since their last full-time job, while this number was 37 for job seekers aged 25-44. This shows that older adults have greater barriers to re-enter the labour force (Chomik & Piggott, 2012). Moreover, age discrimination has been identified as an important barrier for employment at older ages (Adair & Temple, 2012; National Seniors Productive Ageing Centre, 2011). In Australia, the national prevalence survey of age discrimination found that 27% of mature-age workers have experienced age discrimination in the workplace (Australian Human Rights Commission, 2015). This indicates that the creation of more job opportunities for older workers would potentially increase the retirement age, or at least older workers would plan for a later retirement. This result may also reflect the fact that some older workers do not want to retire unless they are forced to – by health problems or job loss – which are more likely to happen later in life.

For males, a significant reason to retire that relates to work characteristics was “job too stressful”. Older workers who consider “job too stressful” as an important aspect in their future decision to retire showed a shorter time to retirement. This result supports previous findings in relation to negative work characteristics leading to earlier expected retirement (Knox, 2003) and earlier retirement timing (Honig, 1996). Specifically, this result is consistent with findings from the Netherlands showing that job pressure is associated with an earlier planned retirement age (van Solinge & Henkens, 2014). The effect of job stress on subjective time to retirement could be partially explained by changes in motivation at older ages. Extending on socioemotional selectivity theory, it could be expected that older adults’ focus on future-oriented goals – in this case, their career – diminishes as the perception of time remaining in life becomes more limited. Thus, it could be expected that older workers may consider that being under stress is no longer worthwhile and may start to focus on other aspects of their personal experience in the present. Consequently, work stress can become a ‘push’ factor that motivates retirement. It is possible that those respondents who rated “job too stressful” as important were already experiencing stress at work, although the data available does not allow exploring this hypothesis.

For females, a significant predictor of subjective time to retirement was “want to spend more time with family”. Females who rated this statement as important for their future decision to retire expected a shorter time to retirement than those who did not. This

finding can be understood in terms of the role that family plays in the lives of females and traditional gender roles. Females are more likely to have interrupted careers due to caring responsibilities (e.g., ABS, 2013b; Han & Moen, 1999) and are less likely to work full-time compared to their male counterparts (Glaser, Evandrou, & Tomassini, 2006; Loh & Kendig, 2013). Particularly among those with dependent children (five years or younger), Australian data shows that the labour force participation of males is 38 percentage points higher than the participation of females (ABS, 2013b). Having more interrelated work and family trajectories over the life course may result in females placing higher importance on family – as opposed to work – so that family becomes a motivation to retire. Traditional gender roles seem to still apply in Australia, where males do more hours of paid work and women do most of the childcare and caring for others (ABS, 2013b).

Additionally, females who rated “need to care for sick/disabled family member” as important for their future decision to retire, expected a longer time to retirement than those who did not. This was also found by Beehr et al. (2000) regarding expected retirement age. In line with the discussion above, this reason was not significant for males. Caring has a much greater effect on the labour force participation of older females than of older males (Evandrou & Glaser, 2003). Caring responsibilities reduce the probability of being in paid work and females are more likely to provide care than males (e.g., ABS, 2013b; Moen & Flood, 2013; Vlachantoni, 2010). For example, females caring for their husbands are much more likely to retire than those who are not carers (Dentinger & Clarkberg, 2002). Furthermore, research has shown that caring responsibilities can force adults in the pre-retirement years out of the labour force, particularly females (Evandrou & Glaser, 2003). Similar to the effect of the importance of ill health and job loss, the positive effect of the importance of the need to care for a family member on subjective time to retirement suggests that these females may be planning to work for as long as possible until they are ‘pushed’ out of the labour force by the caring needs of a family member.

In contrast, rating “want to pursue other activities” as important predicted shorter time to retirement among females. It is possible that the importance of work decreases as workers age, and a greater focus is placed on ‘other activities’. It has been suggested in the literature that leisure pursuits are likely to influence retirement decisions (e.g., Beehr, 1986; Feldman, 1994; Wolcott, 1998). Furthermore, a study showed that 70% of

recently retired Americans stated wanting to do other things as a reason to retire (Moen et al., 2000).

As expected, family and personal factors were more important for females relative to males. On the other hand, work-related factors were significant for males. Notably, the importance of job loss was also significant for females' subjective time to retirement – although a larger effect was observed for males. This finding indicates that both males and females perceive that there are limited job opportunities at older ages. Results are generally consistent with previous findings on reasons for complete retirement; males are more likely to give financial or job-related reasons, while females more often mention family and lifestyle reasons for complete retirement (Warren, 2006).

Social connectedness

Social connectedness is not a major factor influencing males' subjective time to retirement. Only voluntary work showed a significant effect (although marginal), indicating that those who participate in voluntary work expect a shorter time to retirement than those who do not participate. Older workers engaged in formal voluntary activities are already involved in other productive activities outside paid work, which could motivate them to retire sooner. This finding is in contrast with a previous study on retirement timing that found that formal participation (civic and voluntary associations and local politics) was associated with later retirement (Lancee & Radl, 2012). However, the inclusion of other aspects of formal participation besides voluntary work in this study – i.e., civic participation and local politics – may have influenced this result.

Among females, a number of social connectedness indicators had significant effects. Importantly, indicators related to different networks showed significant associations: relationships with family, friends and neighbours play a significant role in females' subjective time to retirement. Having a larger and more diverse network of close others (Antonucci & Akiyama, 1987a) may mean that there is a greater variety of sources to influence retirement transitions for females. In line with the general hypothesis, females with a large family network structure show a shorter subjective time to retirement relative to those with a medium or small network. In other words, a larger family network structure is an incentive to plan a closer retirement. Previous research has shown that having regular contact with children increases the likelihood of retirement among females (Szinovacz et al., 2001). In the present study, the measure of network

structure does not allow separating contact with children from contact with other non-co-resident family members. However, the results are in a similar line, showing that more contact – in this study, a larger network structure – is associated with earlier retirement planning.

The three measures of quality of relationships with network members had a significant effect on subjective time to retirement among females, but the nature of the association differed depending on the indicator. Based on the conceptual framework (see Section 3.3.2), it could have been expected that negative relationships would be associated with delayed retirement as retirement would be less attractive in the absence of good quality of relationships. Consistently, results showed that higher frequency of negative social exchanges with friends is associated with longer time to retirement. In this case, leaving the workforce could result in greater isolation and reduced support. A similar result was found by Elovainio and colleagues (2003). In their study, older female workers with lower levels of support showed a lower motivation to retire early. For these females, their support network does not operate as a ‘pull’ factor. In line with the hypotheses, older females who have a close relationship with neighbours expect a shorter time to retirement relative to those who do not have this close relationship. This finding is consistent with the increased importance of neighbours as a source of support in old age. Cutrona and Wesner (2009) suggest that being able to rely on neighbours is associated with greater well-being in older adults, particularly in the context of age-related declines that could lead to social isolation. In particular, neighbours become an essential source of support for older women living alone, contributing to their physical and mental health (Cutrona & Wesner, 2009). The analysis of subjective time to retirement indicates that having neighbours as a resource to rely on in retirement is an important factor for female’s retirement planning.

It is not surprising that relationship with neighbours is not as relevant for males since males tend to rely on their spouses for support, while females are more likely to turn to children and friends for support (Antonucci & Akiyama, 1987a; Gurung et al., 2003). These differences in the importance of the sources of support mean that the quality of relationships with others besides the spouse is not as relevant for males’ as it is for females’ subjective time to retirement.

In contrast, higher frequency of negative social exchanges with non-co-resident family members was associated with shorter subjective time to retirement among females. This

finding was opposed to the hypothesis of a better quality of relationships leading to shorter time to retirement. Although this result was not initially expected, it can be understood in the context of females' life course. Females are much more likely than males to provide care and are less likely to work because of caring responsibilities (ABS, 2013b). In addition, females are more likely than males to give up full-time work in order to care for a family member (Warren, 2008). Research has also found that non-discretionary relationships, for example with family members, could be a source of negative exchanges (Huxhold et al, 2013). Therefore, it was hypothesised that this finding could be related to work arrangements generating conflict with family members. Follow-up analyses of the interaction effect of work arrangements with negative social exchanges with family revealed that higher frequency of negative exchanges is associated with shorter time to retirement only among those working full-time or self-employed, but no effect was found among females working part-time. The source of the conflict with non-co-resident family members could be these females' lack of availability to contribute to, for example, caring for elderly parents, ill siblings or grandchildren. These pressures may be reflected in frequent negative exchanges with family members, and result in shorter subjective time to retirement. Working part-time, in turn, provides the opportunity to reconcile multiple demands; part-time workers are more likely than full-time workers to engage in multiple activities (Loh & Kendig, 2013).

The significant effect of voluntary work found among males was not found among females. Males' greater focus on paid work and limited engagement in other productive activities beyond paid work over the life course (Loh & Kendig, 2013) may explain the different role of voluntary work in males' and females' retirement planning. First, when thinking about retirement, it may be more important for males to think about a formal productive activity which involves public engagement to replace paid work (for example, to maintain status or identity). Second, not having engaged in other activities to the same extent as females – whose careers are generally more interrupted – it is possible that males will turn to an organisation in order to find a source of productive engagement. These factors may have contributed to formal voluntary work being more important in males' retirement planning than females'.

Consistent with the life course approach and the concept of linked lives, the different trajectories that males and females follow throughout their life course are reflected in the different factors that influence subjective time to retirement. Because of traditional

gender role socialisation and more stable labour force participation, males' identity is likely to be strongly defined by their working lives and work-related roles. Females' identity and life course transitions, especially in relation to labour force participation, are more likely to be influenced by family-related roles and responsibilities, particularly because most females have interrupted careers due to child-rearing and other caring needs. Traditional gender roles seem to be present in the way social connectedness influences subjective time to retirement.

A limitation of this analysis is, as it is with most cross-sectional analysis, the possibility of reverse causation. Research has shown that time to retirement is negatively associated with how much older workers think about retirement (Noone, Alpass, & Stephens, 2010). However, research has also shown that although financial preparation tends to increase as individuals get closer to retirement, there is no evidence of increases in other types of preparation (Moen et al., 2000). In addition, previous longitudinal research has found stable patterns of social activities over the life course with no increases in social activities in the years prior to retirement (Lancee & Radl, 2012). Therefore, the findings presented in this section are more likely to show the influence of social connectedness on retirement planning than the opposite. Another limitation is that retirement expectations vary over time (Wong & Hardy, 2009) and are not always predictive of retirement behaviour (van Solinge & Henkens, 2010). As a result, factors influencing retirement planning may not necessarily influence actual behaviour. One of the reasons for this is the multiple constraints on labour force participation and retirement decisions that older adults face (see Chapter 2, Section 2.3 for a discussion of some of these constraints).

Sixty five participants who were working full-time, part-time or self-employed and were not retired did not state their expected retirement age. It is possible that these missing data introduced a bias in the analysis, for example, if these people do not know when they expect to retire because retirement is still far away for them or, on the contrary, if they do not know when they expect to retire because they want to work for as long as possible. It is not possible to know if participants who did not state their expected retirement age had a particular inclination towards earlier or later retirement.

As discussed in Chapter 4, a further limitation is that the data are not representative of the Australian population, although important socio-demographic characteristics were controlled for in the present analysis. In spite of these limitations, the present analysis

provides useful information about the association between social connectedness indicators and subjective time to retirement.

Conclusion

This chapter examined the influence of social connectedness on subjective time to retirement among males and females in the ‘pre-retirement’ phase of the process of retirement. It was found that elements of social connectedness – voluntary work for males and network structure and network quality for females – are significant predictors of subjective time to retirement, over and above the significant effect of elements of ‘past history’, ‘current circumstances’ and ‘expectations’, including reasons to retire.

As expected from the theoretical framework, the results showed that higher social connectedness is generally associated with a shorter subjective time to retirement. Additionally, social connectedness indicators play a much bigger role in females’ retirement planning than males’; among males, only formal social engagement showed a significant association. In contrast, among females, large family network structure, better quality of relationships with friends and close relationship with neighbours, predicted shorter subjective time to retirement. Overall, this suggests that females who have not built strong networks would not have these social relations as a ‘pull’ factor, and may not want to lose the social connectedness opportunities provided by work. These results also highlight the important role of other networks outside the family, such as friends and neighbours, for females’ retirement planning. Females who have focused mainly on work during their lives, and as a result have not built strong social connections, may have a stronger work-related role identity which could encourage them to stay at work for longer.

Based on the findings of this analysis of subjective time to retirement it could be expected that network structure, network quality and formal social engagement will show significant associations with retirement status. This hypothesis will be explored in the next chapter (Chapter 6).

6. Social connectedness and retirement status

Chapter 5 showed that social connectedness is associated with retirement planning, by influencing subjective time to retirement. Chapter 5 also showed this association is different for males and females; only voluntary work is a significant predictor of subjective time to retirement for males, while network structure and network quality are significant for females. The current chapter explores the second research question: What are the associations between social connectedness and retirement status? Does this association differ by age group? In the context of the conceptual framework, this chapter examines the association between social connectedness and retirement status for people in different phases of the process of retirement. This chapter compares workers, who are still in the pre-retirement phase, with retirees, who have gone through the pre-retirement phase as well as through the transition from work to retirement.

Based on the theoretical approaches (Section 3.3.1) and conceptual framework (Section 3.3.2), older adults with large networks of family and friends, good quality of relationships, larger number of people providing support and higher levels of formal social engagement may have a higher motivation to retire, while those with more restricted social connectedness may be more likely to delay retirement. Therefore, it is expected that retirees will have higher levels of connectedness than workers.

The association between social connectedness and retirement status is examined separately for males and females and elements of ‘past history’ (age and education), ‘current circumstances’ (health status, partnership status, and financial circumstances) and ‘expectations’ (subjective life expectancy) are controlled for. In addition, the association between social connectedness and retirement is investigated separately for four age groups (50-59; 60-64; 65-69 and 70 and over). These four age groups have different probabilities of being retired. According to the Australian Bureau of Statistics, 26% of Australian adults aged 50-59 are retired. Among people aged 60-64, 36% are retired and 63% are retired in the 65-69 age group. After the age of 70, 85% of Australian adults report being retired (ABS, 2013a).

6.1.Data and methods

The data used in this chapter are from the SNAP survey and include adults aged 50 and over whose working status could be clearly identified from their responses (retired and not retired). Respondents excluded from this analysis include 59 missing in the work status question, 56 disabled and 114 who were not working and did not identify themselves as retired. Table 6 and Table 7 show the socio-demographic characteristics and social connectedness indicators of the sample. Social connectedness indicators include network structure, network quality, social support and formal social engagement. Network structure consists of the average of number of non-co-resident family members/friends, number of occasions and time spent with non-co-resident family members/friends in the last four weeks (range from 1 to 5). This average was categorized into ‘small’, ‘medium’ and ‘large’ network structure. Network quality consists of a binary variable indicating if respondents have experienced negative social exchanges with non-co-resident family members/friends (1 ‘no’, 0 ‘yes’)⁸. Social support was measured as the size of the support network; that is, the number of people (non-co-resident family members/friends) who had provided support – in this case, instrumental support – in the last four weeks. This variable was recoded into three categories ‘small’, ‘medium’ and ‘large’ in order to examine non-linear associations. Formal social engagement consisted of participation in voluntary work in the last 12 months (1 ‘yes’, 0 ‘no’) and participation in organised group activities in the last four weeks (1 ‘yes’, 0 ‘no’; see Section 4.1.1 for full details on the variables used).

⁸ The variable negative social exchanges was used as a continuous variable in the analysis of subjective time to retirement. This variable is used as a binary variable in the analysis of retirement status since logistic models using the continuous measure did not fit the data well according to Hosmer-Lemeshow goodness-of-fit test. Emotional closeness to neighbour, which was included in the analysis of subjective time to retirement was not included in the analysis of retirement status since it was not significant in any of the six models (males, females, 50-59, 60-64, 65-69, 70 and over).

Table 6. Descriptive statistics by sex

Variable	Males (<i>n</i> = 817)		Females (<i>n</i> = 1067)	
	<i>M</i> / %	<i>SD</i>	<i>M</i> / %	<i>SD</i>
Completely retired (% yes)	54.4		49.6	
Age in years	66.5	8.1	64.7	7.8
Self-rated health (1 excellent- 5 poor)	2.5	0.9	2.4	0.9
Living with partner (% yes)	86.1		58.2	
Highest level of education (%)				
University degree	31.3		28.5	
Certificate/diploma	21.6		24.9	
Higher school/apprenticeship	23.5		15.0	
Intermediate/no school certificate	23.6		31.6	
Satisfaction with standard of living	4.1	0.8	4.1	0.8
Subjective life expectancy	18.9	10.2	20.8	10.1
Family network structure (%)				
Small	25.7		22.4	
Medium	63.1		59.6	
Large	11.2		18.0	
Friend network structure (%)				
Small	26.9		16.3	
Medium	59.6		64.4	
Large	13.5		19.4	
Network quality				
Negative exchanges family (% no)	31.1		27.7	
Negative exchanges friends (% no)	36.1		40.2	
Support network family (%)				
Small	60.7		56.6	
Medium	29.8		31.4	
Large	9.4		12.0	
Support network friends (%)				
Small	64.1		59.8	
Medium	28.9		29.6	
Large	7.0		10.6	
Formal social engagement				
Does voluntary work (% yes)	43.7		45.3	
Participates in group activities (% yes)	66.2		70.9	

Source: SNAP.

Table 7. Descriptive statistics by age group

	50-59 (<i>n</i> = 487)		60-64 (<i>n</i> = 372)		65-69 (<i>n</i> = 498)		70+ (<i>n</i> = 529)	
	<i>M</i> / %	<i>SD</i>	<i>M</i> / %	<i>SD</i>	<i>M</i> / %	<i>SD</i>	<i>M</i> / %	<i>SD</i>
Completely retired (% yes)	13.1		35.0		65.9		86.0	
Age in years	55.9	2.4	61.9	1.4	66.9	1.3	75.6	4.8
Self-rated health (1 excellent-5 poor)	2.3	0.9	2.3	0.8	2.4	0.9	2.6	1.0
Living with partner (% yes)	79.4		70.2		68.4		64.0	
Highest level of education (%)								
University	27.8		29.6		32.3		29.3	
Certificate/diploma	26.0		27.7		20.3		21.0	
Higher school/apprenticeship	21.0		17.2		14.0		21.5	
Intermediate/no school certificate	25.2		25.5		33.3		28.2	
Satisfaction with standard of living	4.1	0.9	4.1	0.8	4.1	0.8	4.1	0.8
Subjective life expectancy	27.9	9.7	22.7	8.0	18.7	7.9	11.8	6.9
Family network structure (%)								
Small	21.0		25.1		26.3		23.1	
Medium	64.9		57.7		59.2		62.3	
Large	14.1		17.1		14.5		14.6	
Friend network structure (%)								
Small	21.0		19.8		21.0		21.0	
Medium	65.5		63.4		62.0		59.2	
Large	13.5		16.8		17.1		19.8	
Network quality								
Negative exchanges family (% no)	23.8		26.1		27.9		37.1	
Negative exchanges friends (% no)	34.7		38.4		38.8		42.2	
Support network family (%)								
Small	56.1		61.5		60.9		56.1	
Medium	28.2		30.0		30.7		33.1	
Large	15.7		8.5		8.4		10.8	
Support network friends (%)								
Small	60.6		60.9		63.8		61.1	
Medium	31.0		31.1		27.8		27.6	
Large	8.4		8.0		8.4		11.3	
Formal social engagement								
Does voluntary work (% yes)	33.1		43.9		47.1		53.8	
Participates in group activities (% yes)	57.6		68.0		69.8		78.8	

Source: SNAP.

The next section (6.2) describes the social connectedness of retired and non-retired older adults and identifies significant differences by retirement status. The following

section (6.3) uses multiple logistic regressions to identify the association of social connectedness and retirement status by sex and age group while controlling for ‘past history’, ‘current circumstances’ and ‘expectations’.

6.2.Descriptive analysis: bivariate associations between social connectedness and retirement status by sex and age group

This section explores differences in social connectedness indicators by retirement status among males, females and across the four age groups (50-59, 60-64, 65-69, 70 and over). T-tests (two-tailed) are used to identify significant differences in mean scores between retirees and non-retirees and chi-squared is used to test significant associations between categorical variables and retirement status. These are unadjusted analysis. Table 8 shows the results for males and females. Among males, there are significant associations between retirement status and family network structure, friend network structure, family network quality and formal social engagement. Results indicate that a higher proportion of non-retired males have a medium-size family network and friend network. In terms of network quality, a higher proportion of male retirees report not experiencing negative social exchanges with family members. Regarding formal social engagement, a higher proportion of retirees report participating in organised group activities, compared with non-retirees. Among females, similar to males, a higher proportion of those not retired have a medium network of friends. In terms of network quality, female retirees report better quality of relationships than non-retirees. Females who are retired have larger support networks of friends than those who are not retired. Similarly, a higher proportion of female retirees participate in group activities and voluntary work, compared with females who are not retired.

Table 8. Bivariate associations social connectedness and retirement status by sex

Variable	Males		X^2	Females		X^2
	Not retired	Retired		Not retired	Retired	
	(<i>n</i> = 373)	(<i>n</i> = 444)		(<i>n</i> = 538)	(<i>n</i> = 529)	
Family network structure (%)						
Small	24.2	27.0	10.29**	21.6	23.2	
Medium	68.1	58.9		60.8	58.3	
Large	7.8	14.2		17.5	18.5	
Friend network structure (%)						
Small	27.5	26.5	9.39**	17.1	15.4	11.63**
Medium	63.1	56.7		67.7	61.0	
Large	9.4	16.9		15.2	23.6	
Network quality						
Negative exchanges family (% no)	25.7	35.6	9.18**	23.1	32.3	11.48**
Negative exchanges friends (% no)	34.9	37.2		36.1	44.4	7.76**
Support network family (%)						
Small	60.5	61.0		56.3	57.0	
Medium	28.7	30.9		30.9	31.9	
Large	10.8	8.2		12.9	11.1	
Support network friends (%)						
Small	62.7	65.3		62.7	56.7	7.33*
Medium	29.8	28.1		29.1	30.1	
Large	7.5	6.6		8.2	13.2	
Formal social engagement						
Does voluntary work (% yes)	40.7	46.2	9.99**	37.4	53.4	27.12**
Participates in group activities (% yes)	60.4	71.1		62.2	79.6	37.60**

Note. * $p < 0.05$; ** $p < 0.01$. Source: SNAP. Only statistically significant chi-squared values are included in the table.

Table 9 shows the bivariate results by age group. Among the youngest age group (50-59), significant associations between network structure and retirement status were identified. Regarding family network, those not retired are more likely to report a medium-sized network, while retirees are more likely to report a large network, compared with those not retired. A higher proportion of those not retired reported small networks of friends compared with those retired. Similarly, retirees were more likely to report large networks of friends. In addition, a higher proportion of retirees participate in voluntary work compared with those not retired.

Table 9. Bivariate associations social connectedness and retirement status by age group

Variable	50-59			60-64			65-69			70+		
	Not retired (n = 423)	Retired (n = 64)	X ²	Not retired (n = 242)	Retired (n = 130)	X ²	Not retired (n = 170)	Retired (n = 328)	X ²	Not retired (n = 74)	Retired (n = 455)	X ²
Family network structure (%)												
Small	21.23	19.35	10.52**	27.00	21.60		20.75	29.11		21.13	23.36	
Medium	66.67	53.23		57.81	57.60		66.67	55.38		63.38	62.15	
Large	12.10	27.42		15.19	20.80		12.58	15.51		15.49	14.49	
Friend network structure (%)												
Small	23.15	6.56	10.61**	19.31	20.80		20.37	21.32		18.31	21.41	
Medium	64.53	72.13		66.52	57.60		67.28	59.25		69.01	57.63	
Large	12.32	21.31		14.16	21.60		12.35	19.44		12.68	20.69	
Network quality												
Negative exchanges family (% no)	23.64	25.00		27.69	23.08		17.06	33.54	15.11**	29.73	38.24	
Negative exchanges friends (% no)	33.33	43.75		40.08	35.38		33.53	41.46		39.19	42.64	
Support network family (%)												
Small	56.0	56.9		62.0	60.7		54.6	64.1		64.7	54.7	
Medium	28.8	24.1		27.9	34.2		34.9	28.6		29.4	33.7	
Large	15.3	19.0		10.2	5.1		10.5	7.3		5.9	11.6	
Support network friends (%)												
Small	61.8	52.5		63.7	55.7		64.1	63.7		60.3	61.2	
Medium	30.3	35.6		29.7	33.9		27.5	28.0		30.2	27.2	
Large	7.9	11.9		6.6	10.5		8.5	8.3		9.5	11.6	
Formal social engagement												
Does voluntary work (% yes)	31.98	40.32		39.33	52.34	5.73*	43.45	49.06		64.79	52.02	4.02*
Participates in group activities (% yes)	56.05	68.33		62.98	77.17	7.62**	63.03	73.35	5.50*	80.56	78.46	

Note. * $p < 0.05$; ** $p < 0.01$. Source: SNAP. Only statistically significant chi-squared values are included in the table.

Among adults aged 60-64, the only significant differences are found regarding formal social engagement. More than half of those retired participate in voluntary work – compared with 39% of those not retired – and more than 77% of retirees participate in organised group activities – compared with 63% of those not retired. Among adults aged 65-69, one third of those retired report not having negative exchanges with family members, compared with 17% of those not retired. Over 73% of those retired in this age group participate in group activities and no differences were found regarding participation in voluntary work. Among the oldest age group, aged 70 and over, the only difference was found regarding voluntary work participation, where adults aged 70 and over who were still at work showed a higher rate of participation compared with those already retired. Only seven per cent of the non-retired group aged 70 and over works full-time. Therefore, they are likely to have the time to participate in other activities. In addition, at this age, those who are not retired may be in much better health than retirees, and health problems may be preventing retirees in this age group from participating in activities such as voluntary work.

In summary, overall retirees show larger networks of family and friends, better quality of relationships and higher levels of formal social engagement than non-retirees.

6.3. Multiple regression analysis

The analyses in the previous section showed that there are differences by retirement status in several social connectedness indicators, and that these associations differ by sex and across age group. The analyses also indicated that, overall, retirees are more engaged and have better quality of relationships than their counterparts. Although the results described above are informative in terms of the social connectedness characteristics of retirees and non-retirees, they only describe broad group differences and do not control for other factors that can also influence the social connectivity of older adults. This section investigates the association between social connectedness indicators and retirement status, controlling for ‘past history’ (age and education), ‘current circumstances’ (health status, partnership status, and financial circumstances) and ‘expectations’ (subjective life expectancy).

Retirement status is measured as a binary variable – completely retired (coded 1) and not completely retired (coded 0). Therefore, logistic regression is used to identify the significant associations between multiple indicators of social connectedness and the

binary outcome variable. In line with the conceptual framework presented in Section 3.3.2, logistic regression analyses are conducted separately for males and females.

It was discussed in Section 3.3.1 in the context of the life course approach that the ‘timing of lives’ is an important aspect to consider in the study of social connectedness and the process of retirement. Therefore, it is expected that the association between social connectedness and retirement status will vary by age group. To explore this, models are presented separately for four age groups: 50-59, 60-64, 65-69 and 70 and over. The role of social connectedness is expected to be more important close to the conventional retirement age of 65.

Two models are presented for each group. Model 1 contains only the control variables in ‘past history’ (age and education), ‘current circumstances’ (health status, partnership status, and financial circumstances) and ‘expectations’ (subjective life expectancy). Model 2 includes the control variables and the independent variables that measure social connectedness. In order to test if the model containing the independent variables – Model 2 – is a better model than Model 1, the deviance statistics of both models are compared. Since Stata does not compute a deviance statistic, this is calculated using the log likelihood provided in the logistic regression output, with the following formula (Singer & Willet, 2003):

$$\text{Deviance} = -2 * \log \text{likelihood}$$

The deviance is calculated for the two models and the difference in deviances between the two models – which has X^2 distribution with k degrees of freedom (k = number of parameters) – is compared with the relevant critical value of the X^2 distribution. As Model 1 and Model 2 are nested, the null hypothesis being tested is that the coefficients of the parameters added in Model 2 are equal to zero. If the difference in deviances is larger than the critical value of the X^2 distribution with k degrees of freedom, the null hypothesis is rejected, meaning that Model 2 is a better model of retirement status. One of the conditions of this analysis is that the log likelihood for both models is calculated over the exact same sample (Singer & Willet, 2003). Since there are missing values in some of the independent variables, this results in a smaller sample in Model 2 than Model 1. To address this, the same sample is used in both models.

6.3.1. Multiple regression models retirement status by sex

Table 10 and Table 11 show the results of the logistic regression analyses separately for males and females. Model 1 contains only the control variables and Model 2 incorporates the social connectedness indicators. The tables also include the log likelihood for each model. Males' and females' models fit the data well according to the Hosmer-Lemeshow goodness-of-fit test, which was not significant. That is, the observed data did not differ significantly from that predicted by the model ($X^2 = 5.62$, $p > 0.05$ males Model 2; $X^2 = 15.10$, $p > 0.05$ females Model 2). Among males, Model 2 shows that older age and poorer self-rated health are associated with higher odds of being retired. Males with a certificate or diploma are 1.74 times as likely to be retired as those who have a University degree. Satisfaction with standard of living is also significantly associated with retirement status; the higher the satisfaction, the higher the odds of being retired. Living with a partner did not have a significant effect.

Model 2 results indicate that no social connectedness indicators were significantly associated with retirement status for males. However, three indicators were close to significance. Firstly, the odds of being retired are higher for males who reported a large family network structure, compared with those who reported a medium family network structure (Odds ratio = 1.86, $p = 0.055$). Secondly, the odds of being retired are higher for males who reported a large friend network structure relative to those who reported a medium friend network structure (Odds, ratio = 1.85, $p = 0.058$). Thirdly, not experiencing negative social exchanges with family that is, having better quality of relationships, is associated with being retired (Odds ratio = 1.61, $p = 0.058$). Although three social connectedness indicators were marginally significant in males' Model 2, the analysis of deviance showed that Model 2 is not significantly better than Model 1 in predicting retirement status ($X^2 = 19.33$, 12, $p > 0.05$).

Table 10. Logistic regression retirement status males

Variable	Model 1		Model 2	
	OR	SE	OR	SE
Age in years	1.20**	0.02	1.20**	0.02
Self-rated health (1 excellent- 5 poor)	1.35*	0.17	1.48**	0.19
Living with partner (ref: no)	0.79	0.25	0.85	0.28
Highest level of education (ref: university)				
Certificate/diploma	1.62	0.43	1.74*	0.48
High school/apprenticeship	1.44	0.39	1.59	0.45
Intermediate/no school certificate	1.34	0.36	1.43	0.40
Satisfaction with standard of living	1.50**	0.20	1.49**	0.20
Subjective life expectancy (cont.)	0.98	0.01	0.99	0.01
Family network structure (ref: medium)				
Small			1.57	0.39
Large			1.86†	0.60
Friend network structure (ref: medium)				
Small			1.00	0.24
Large			1.85†	0.60
Network quality				
Negative exchanges family (ref: yes)			1.61†	0.41
Negative exchanges friends (ref: yes)			0.84	0.20
Support network family (ref: small)				
Medium			1.03	0.24
Large			1.18	0.44
Support network friends (ref: small)				
Medium			0.69	0.16
Large			0.58	0.24
Formal social engagement				
Does voluntary work (ref: no)			0.91	0.20
Participates in group activities (ref: no)			1.32	0.31
Intercept (x 10 ⁻⁷)	8.70	14.5	2.57	4.56
	<i>n</i>	636	636	
	Log likelihood	-320.43	-310.76	

Note. OR = odds ratio. † 0.05 < *p* < 0.06; * *p* < 0.05; ** *p* < 0.01. ref = reference category. Source: SNAP.

Females' Model 2 (Table 11) also shows a significant association between retirement status and age and education, and living with a partner is associated with higher odds of being retired. Among females, having a large family network structure is associated with higher odds of being retired, compared with having a medium family network structure. Likewise, having a large friend network structure is associated with higher likelihood of being retired, compared with having a medium friend network structure. Having received instrumental support from a larger number of family members – i.e., having a large support network of family – is marginally associated with a higher

likelihood of being at work (compared with a small support network of family, $p = 0.056$). In contrast, having received instrumental support from a larger number of friends – i.e., having a large support network of friends – is associated with being retired. In terms of formal social engagement, participation in voluntary work and participation in group activities are associated with higher odds of being retired. The analysis of deviance shows that, for females, Model 2 is significantly better than Model 1 ($X^2 = 42.48, 12, p < 0.001$).

Table 11. Logistic regression retirements status females

Variables	Model 1		Model 2	
	OR	SE	OR	SE
Age in years	1.25**	0.02	1.23**	0.02
Self-rated health (1 excellent - 5 poor)	1.09	0.12	1.17	0.14
Living with partner (ref: no)	1.54*	0.30	1.65*	0.34
Highest level of education (ref: university)				
Certificate/diploma	1.09	0.27	1.36	0.36
High school/apprenticeship	1.29	0.39	1.61	0.51
Intermediate/no school	1.95**	0.47	2.71**	0.70
Satisfaction with standard of living	1.22	0.14	1.15	0.13
Subjective life expectancy	0.99	0.01	0.98	0.01
Family network structure (ref: medium)				
Small			1.42	0.33
Large			1.73*	0.43
Friend network structure (ref: medium)				
Small			1.05	0.29
Large			1.76*	0.44
Network quality				
Negative exchanges family (ref: yes)			1.14	0.26
Negative exchanges friends (ref: yes)			1.15	0.24
Support network family (ref: small)				
Medium			0.75	0.17
Large			0.53†	0.18
Support network friends (ref: small)				
Medium			1.51	0.34
Large			2.22*	0.78
Formal social engagement				
Does voluntary work (ref: no)			1.62*	0.33
Participates in group activities (ref: no)			1.76*	0.39
Intercept ($\times 10^{-7}$)	1.98	3.10	1.87	3.06
	<i>n</i>	763	763	
	Log likelihood	-373.74	-352.50	

Note. OR = odds ratio. † $0.05 < p < 0.06$; * $p < 0.05$; ** $p < 0.01$. ref = reference category. Source: SNAP.

6.3.2. Multiple regression models retirement status by age group

The circumstances in which retirement occurs are likely to be different for people in different life stages. That is, which factors are most important in the decision and which constraints older workers have to face is influenced by the workers' stage in the life course, which is also associated with age. This section identifies the significant associations between social connectedness indicators and retirement status by age group. It is expected that the variables that are relevant will differ by age group, reflecting different life circumstances, priorities and constraints.

Similar to the analysis by sex, two models are conducted by age group: Model 1 containing only the control variables and Model 2 incorporating the social connectedness indicators. Table 12 shows the results for the association between the control variables and retirement status for the four age groups (Model 1). Age is significant – and positively associated with being retired – in the youngest and oldest age groups. Being female is associated with lower odds of being retired among those aged 60-64 and with higher odds of being retired among those aged 65-69. Level of education is associated with retirement status among those aged 50-59 and 70 and over, showing that those with lower education are more likely to be retired. For respondents aged 60 to 64, satisfaction with standard of living has a significant effect: each extra point in satisfaction with standard of living increases the odds of being retired by 83%. In terms of partnership status, living with partner is associated with retirement status among those aged 65-69; the odds of being retired for those living with partner are 1.80 the odds of those not living with partner. Once older adults reach the age of 65, their subjective life expectancy is significantly associated with retirement status. Those older adults who expect to live more years are less likely to be retired. That is to say, respondents with a more open-ended future time perspective are more likely to still be in paid work than those with a more restricted future time perspective.

Table 12. Logistic regression retirement status by age group Model 1: control variables

Variable	50-59		60-64		65-69		70+	
	OR	SE	OR	SE	OR	SE	OR	SE
Age in years	1.23**	0.09	1.15	0.11	1.07	0.09	1.08*	0.05
Self-rated health (1 excellent - 5 poor)	1.19	0.23	1.41	0.25	1.29	0.18	0.81	0.16
Sex (ref: male)	1.89	0.65	0.56*	0.16	1.78*	0.48	1.62	0.61
Living with partner (ref: no)	1.99	0.93	0.83	0.25	1.80*	0.52	0.99	0.39
Education (ref: university)								
Certificate/diploma	1.08	0.49	1.55	0.53	1.17	0.36	1.44	0.59
High school/apprenticeship	1.20	0.61	0.83	0.34	1.93	0.74	2.66*	1.28
Intermediate/no school	2.40*	1.01	1.14	0.42	1.57	0.46	2.73*	1.19
Satisfaction with standard of living	1.21	0.26	1.83**	0.36	1.23	0.17	1.01	0.21
Subjective life expectancy	1.00	0.02	1.01	0.02	0.96*	0.02	0.95*	0.03
Intercept	3.68e ⁻⁰⁸	1.70e ⁻⁰⁷	6.18e ⁻⁰⁶	3.72e ⁻⁰⁵	0.003	0.02	0.02	0.07
<i>n</i>	397		287		370		345	
Log likelihood	-140.81		-172.96		-223.37		-133.40	

Note. OR = odds ratio. † 0.05 < p < 0.06; * p < 0.05; ** p < 0.01. ref = reference category. Source: SNAP.

Table 13 incorporates social connectedness indicators to the analysis. Except for the model for those aged 60-64, the models fit the data well according to the Hosmer-Lemeshow test for good fit ($p > 0.05$). For those aged 60-64, the significant Hosmer-Lemeshow test ($p = 0.04$) indicates that the data differs significantly from that predicted by the model. Therefore, the results for this age group are not discussed. It is possible that variables that are not included in the model are significant predictors of retirement status in this age group, for example, more direct measures of financial security, such as income or wealth, or more direct measures of functional health.

Table 13. Logistic regression retirement status by age group Model 2: social connectedness

Variable	50-59		60-64		65-69		70+	
	OR	SE	OR	SE	OR	SE	OR	SE
Age in years	1.25**	0.10	1.17	0.11	1.07	0.10	1.09	0.05
Self-rated health (1 excellent – 5 poor)	1.28	0.27	1.34	0.26	1.68**	0.28	0.84	0.18
Sex (ref: male)	1.65	0.61	0.50*	0.15	1.42	0.42	1.58	0.62
Living with partner (ref: no)	2.43	1.20	0.89	0.30	2.09*	0.66	1.00	0.41
Education (ref: university)								
Certificate/diploma	1.22	0.59	1.53	0.55	1.20	0.40	1.29	0.56
High school/apprenticeship	1.49	0.79	0.91	0.39	2.52*	1.10	2.34	1.21
Intermediate/no school	2.82*	1.35	1.35	0.53	2.04*	0.68	2.73*	1.29
Satisfaction with standard of living	1.10	0.24	1.70*	0.35	1.08	0.17	1.03	0.23
Subjective life expectancy	1.00	0.02	1.01	0.02	0.95**	0.02	0.94*	0.03
Family network structure (ref: medium)								
Small	1.33	0.58	1.04	0.35	2.05*	0.66	1.81	0.85
Large	1.84	0.84	1.36	0.51	2.20*	0.83	1.88	0.97
Friend network structure (ref: medium)								
Small	0.30*	0.17	1.47	0.54	1.21	0.39	0.89	0.41
Large	1.67	0.76	1.76	0.66	3.03**	1.21	2.75*	1.35
Network quality								
Negative exchanges family (ref: yes)	1.18	0.47	0.63	0.22	3.70**	1.30	1.08	0.43
Negative exchanges friends (ref: yes)	1.55	0.59	0.91	0.28	0.87	0.25	1.12	0.44
Support network family (ref: small)								
Medium	0.80	0.32	0.95	0.31	0.61	0.18	1.78	0.71
Large	0.70	0.36	0.57	0.32	0.41	0.20	2.76	1.93
Support network friends (ref: small)								
Medium	1.50	0.56	1.41	0.46	1.19	0.35	0.45*	0.17
Large	1.27	0.81	2.39	1.29	1.45	0.75	0.55	0.32
Formal social engagement								
Does voluntary work (ref: no)	1.29	0.47	0.97	0.29	1.52	0.41	0.88	0.33
Participates in group activities (ref: no)	1.36	0.50	1.87†	0.62	2.13*	0.62	0.58	0.30
Intercept	5.02e ⁻⁰⁹	2.62e ⁻⁰⁸	3.47e ⁻⁰⁶	2.19e ⁻⁰⁵	0.0017	0.0110	0.0255	0.1115
<i>n</i>	397		287		370		345	
Log likelihood	-132.01		-134.23		-197.55		-125.70	

Note. OR = odds ratio. † $0.05 < p < 0.06$; * $p < 0.05$; ** $p < 0.01$. ref = reference category. Source: SNAP.

The social connectedness indicators that are reliably associated with retirement status vary across age groups. Among the youngest group, only friend network structure is associated with retirement status. Having a small network of friends is associated with lower odds of being retired (compared with a medium network). The model for those aged 50-59 containing the social connectedness indicators is not significantly better than Model 1, according to the analysis of deviance ($X^2 = 17.61$, 12, $p > 0.05$).

In contrast, the model with the social connectedness indicators – Model 2 – was a better model of retirement status than Model 1 for those aged 65-69 ($X^2 = 51.55$, 12, $p < 0.001$). As expected, the largest number of significant associations between social connectedness and retirement status was found among this age group: network structure, network quality, and formal social engagement showed significant associations. Regarding family network structure, those with a small network and those with a large network have higher odds of being retired compared with those with a medium-sized network. Having a large friend network structure is also associated with higher odds of being retired compared with having a medium or a small friend network (contrast between large and small network is not in the table above). Older adults in this age group who report better quality of relationships with family, that is, those who do not experience negative social exchanges with family members, are 3.70 times as likely to be retired as those who have experienced negative exchanges with family. In terms of formal social engagement, the odds of being retired of those who participate in organised group activities are 2.13 times the odds of those who do not participate. The model for adults aged 70 and over shows that those with a large friend network structure are more likely to be retired than those with a medium-sized friend network. In contrast, older adults who received instrumental support from a small network of friends were more likely to be retired than those who received instrumental support from a medium-sized network of friends. However, the analysis of deviance indicates that Model 2 is not significantly better than Model 1 in explaining retirement status for those aged 70 and over ($X^2 = 15.39$, 12, $p > 0.05$).

6.4. Discussion

This chapter addressed the second research question: What are the associations between social connectedness and retirement status? Does this association differ by age group? The analyses examined the influence of social connectedness indicators, including network structure, network quality, social support and formal social engagement, on retirement status (retired versus not retired), and were conducted separately for males

and females, as well as across four age groups (50-59, 60-64, 65-69, and 70 and over). First, differences in social connectedness by retirement status among males, females and across four age groups were described in a bivariate analysis. These bivariate results showed that overall, retirees are more connected socially. Older adults who were retired generally reported larger networks, better network quality and higher levels of formal social engagement than those who were not retired. However, some variation in terms of these differences was found across groups. For example, a significant association between friend network structure and retirement status was found among males, but not among females. Similarly, retired adults aged 65-69 reported better network quality than those not retired in this age group, but this difference was not found in the other three age groups.

Second, multiple logistic regressions were used to examine the association between social connectedness indicators and retirement status while controlling for covariates, among males, females, and the four age groups (50-59, 60-64, 65-69 and 70 and over). Some of the differences found in the bivariate analysis were also apparent in the multiple regressions. However, not all of the associations were still significant when including all indicators and covariates in the models. For example, the bivariate association between family network structure and retirement status among those aged 50-59 was not significant in the regression models. Among males and those aged 65-69 the bivariate analysis did not show a significant association between friend network structure and retirement status, but a significant association emerged in the regression models (marginally significant for males). For females, friend and family network quality was better among retirees in the bivariate analysis, but this association was not significant when controlling for covariates and other social connectedness indicators. These results show that the association between social connectedness and retirement status depends partly on socio-demographic characteristics, such as partnership status, age and health, and also varies when controlling for other social connectedness indicators. The results from the regression analyses are discussed in detail below.

‘Past history’ and ‘current circumstances’

The analysis identified a number of significant associations between socio-demographic factors and retirement status. An unexpected result was found in the model for the 60-64 age group, showing that females were less likely to be retired than males in this age group. Research has shown that females are likely to increase their labour force participation at older ages (Fullerton, 1999). It is possible that females in this age group

have lower caring responsibilities – less need to care for children than those in the 50-59 age group and less need to care for parents, partners or other relatives than those in the older age groups – which is known to affect females’ labour force participation (Warren, 2008). Therefore, while males in this age group may start to retire, some females may have the opportunity to re-join or continue in the labour force.

Self-rated health is significant among males and among those aged 65-69, indicating that poorer self-rated health is associated with greater likelihood of being retired. Self-perception of health may become a more important factor discriminating between retirement statuses when reaching the conventional retirement and pension eligibility age of 65. At this stage, older workers have a real option of retiring and their health issues may become more urgent and ‘push’ them out of the workforce. Among the oldest age group, it is possible that measures of functional health would be better predictors of retirement status.

Satisfaction with standard of living was significant among males, indicating that higher satisfaction was associated with higher probability of being retired. Satisfaction with standard of living was not associated with retirement status in the youngest age group. This very early retirement (before age 60) seems to be related to other factors in the model, such as living with a partner and low education. Living with partner might facilitate the opportunity to be retired this early if the partner is still in paid work. Those with low levels of education might be more likely to have physically demanding jobs that are more difficult to maintain in later life.

‘Expectations’

Subjective life expectancy becomes significant after the age of 65, although it has no effect in the models by sex. Consistent with socioemotional selectivity theory, older adults with a more open-ended future time perspective – that is, longer subjective life expectancy – are more likely to still be in the workforce. Although causation cannot be inferred from these associations – it is not clear if a more restricted future time perspective influenced retirement or if future time perspective became more restricted after retirement – there is a significant association which is worth investigating further. In particular, the fact that future time perspective is not significant at younger ages may indicate increased importance of future time perspective in the retirement process at older ages, past the conventional retirement age of 65.

Social connectedness

Overall, there is evidence that a larger friend or family network structure, better quality of relationships and higher levels of formal social engagement are associated with higher likelihood of being retired. This analysis also showed that, as expected, significant associations between social connectedness indicators and retirement status vary for males, females and across age groups.

First, there are differences in terms of the areas of social connectedness that are associated with retirement status for each group. The only exception is network structure, which showed the most consistent association. Besides network structure, only network quality was significant for males (both marginally significant). Among females, in turn, network quality was not significant but the other areas, support network and formal social engagement, were. Among those aged 50-59 no other social connectedness indicator, besides network structure, showed significant associations, and among those aged 70 and over, network structure and social support were significant. In contrast, and similar to the findings for females, network structure, network quality, support network and formal social engagement were associated with being retired among those aged 65-69. That is, for females and those around conventional retirement age, a greater diversity of aspects of social connectedness shows significant associations with retirement status.

Second, different types of networks (family, friends and formal group networks) appear to be differentially important for the different sexes and age groups. Family- and friend-related indicators are marginally significant for males, while family, friends and formal group networks are significant for females. Research has shown females have larger and more diverse networks than males (Antonucci & Akiyama, 1987; Gurung et al., 2003). Therefore, it could have been expected that the associations of social connectedness with retirement status would involve a greater diversity of indicators and types of networks among females relative to males. Only one friend-related variable was significant for those aged 50-59 and two friend-related variables were significant for those aged 70 and over. No family-related variables were significant among these two age groups. More diversity was found among those aged 65-69, where family, friends and formal group networks were significantly associated with the likelihood of being retired.

It is important to note that the social connectedness model for those aged 50 to 59, 60 to 64 and those aged 70 and over were not significantly better than the model with the control variables, according to the analysis of deviance. That is, the social connectedness indicators did not contribute significantly to improve the model. These results demonstrate that stage in the life course provides an important context in which to examine the association between social connectedness and retirement. Among those aged 60-64, satisfaction with standard of living plays an important role: higher satisfaction with standard of living is associated with higher probability of being retired. It is possible that at this age, before the 65-year mark, financial reasons are the most prominent in defining retirement status and social relationships play a less central role. In the 70 and over age group, lower education and lower subjective life expectancy are associated with being retired, while social connectedness indicators did not contribute to the model. At this stage in life, it could be hypothesised that social connectedness will not have much association with retirement status as the work-retirement distinction may become less important in defining social roles (Atchley & Barusch, 2004). In addition, only a small proportion of employed persons in this age group would be working full-time (McDonald, 2011), making the possible trade-off between social connectedness and retirement less relevant.

As discussed in the conceptual framework (Section 3.3.2), social connectedness was expected to influence retirement timing by providing an incentive to retire. Therefore, it was expected that retirees would have higher levels of social connectedness than workers. In line with these predictions, having a large family or friend network structure was associated with higher probability of being retired (versus a medium-sized network). These findings are consistent with previous research that has found that those with higher frequency of social activities with family and friends (Lancee & Radl, 2012) as well as regular contact with children (Szinovacz et al., 2001) are more likely to retire. The measure of network structure used in this chapter is broader than those in previous research, including number of people seen, occasions and time spent with them. However, the results are in the same direction, showing that higher contact is associated with retirement. In addition, results from this chapter add to this literature by showing that both family and friend networks have independent associations with retirement.

Results for network structure are not consistent with previous studies by Bossé and colleagues. These authors found that workers had a larger network structure than retirees. However, their measure of network structure included extensiveness of

networks (including marital status, number of people in household, number of children, number of relatives within one hour's drive and number of close friends) combined with frequency of contact with friends, children and other relatives (Bossé et al., 1990). The measure of extensiveness of network is rather different to the measure of network structure used in this thesis. This thesis's measure of network structure is less sensitive to actual network size (for example, number of people in household or number of close friends), so people that only see a few network members with high frequency and intensity can still have a large network structure. These differences could partly explain the different findings. In their longitudinal study, Bossé and colleagues found that long-term retirees had the smallest network structure (what they called quantitative support) and workers the largest, but they also found no effect of retirement in reducing quantitative support during the three years of study. Furthermore, recent retirees had similar levels of quantitative support as workers, and higher levels than long-term retirees (Bossé et al., 1993). Comparing these results with the findings from the current chapter, it is possible that long-term retirees experience a reduction in actual network size, but maintain high frequency and intensity of contact.

A non-linear association between family network structure and retirement was found among those aged 65-69. This association indicated that those who have a large family network structure are more likely to be retired than those with a medium-sized network (discussed above). However, results also indicated that those who have a small family network structure are more likely to be retired than those with a medium-sized network. It is possible that these older adults have certain characteristics that underlie both their smaller networks and tendency to retire earlier. For example, some health conditions, or differences in cognition, or personality factors could affect both people's capacity to form or maintain their network structure, as well as their labour force participation. However, the fact that this result was not found regarding friend network structure suggests that the possible underlying mechanism specifically affects family relationships.

As expected, better quality of relationship with family was associated with being retired (among those aged 65-69 and marginally among males). Previous studies have found that those with better quality marital relationships are more likely to retire (e.g., Song & Marks, 2004; Szinovacz & DeViney, 2000), but these studies did not include other types of relationships. A study by Cornwell et al. (2008) showed that retirees felt closer to network members than non-retirees, which can be an indicator of good relationship

quality. However, the measure of closeness did not specify the type of network. The findings from this chapter suggest that relationship with other family members, non-co-resident family members in particular, are also important in the retirement process.

It was hypothesised that higher levels of social connectedness would be an incentive to retire. However, it was also mentioned in the conceptual framework that the relationship between social connectedness and retirement is likely to be bi-directional. That is, the differences in social connectedness observed between retirees and workers may be a consequence of retirement as opposed to social connectedness influencing retirement. Both mechanisms could be at work to some extent. For example, a supportive social network can be an incentive for retirement. At the same time, leaving work can result in a reduction in network size due to loss of contact with co-workers. In addition, having more time availability in retirement could allow for more time to engage in personal relationships.

In the case of network structure, it is possible that retirees had expanded their contact with network members after retirement. For example, van Tilburg interviewed older workers before and after retirement and found that relationships with higher frequency of contact were more likely to be continued after retirement. Furthermore, this study found that new relationships formed after retirement, also showed higher frequency of contact than relationships that were not continued into retirement (van Tilburg, 1992). Other longitudinal research has also found an increase in contact with friends after retirement (George et al., 1984; Palmore et al., 1984). Network quality could have also improved after retirement. For example, increased frequency of contact, lower levels of stress or less amounts of work-to-family conflict could all contribute to increased quality of relationship with family. Longitudinal research comparing retirees and workers can shed light on the mechanisms behind the observed associations between social connectedness and retirement status.

Instrumental support received from family and friends was associated with retirement among females. However, support from family and support from friends had opposite effects. As expected, receiving support from a larger network of friends was associated with higher probability of being retired. This finding was consistent with previous studies showing that females with low levels of support have lower preference for retirement (Elovainio et al., 2003). However, having received support from a larger number of non-co-resident family members was associated with higher probability of being at work. This result suggests that family members may play a significant role in

helping older females to stay at work. For example, family members could help older females with household or caring responsibilities that could interfere with labour force participation. Bossé and colleagues did not find differences in support between retirees and workers in a cross-sectional study (Bossé et al., 1990). However, the measure of support in their study included emotional support (number of confidants) combined with availability of support from family and friends in time of crisis. Therefore, the different results may be partly explained by the different variables used. In addition, Bossé et al.'s study only included males which may also partly explain this lack of association.

Results for formal social engagement showed that older adults who participate in group activities (females and those aged 65-69) or voluntary work (females) are more likely to be retired. Participation in other productive activities may make retirement more attractive by providing meaningful activities to turn to in retirement and reducing the risk of social isolation. Previous research has found that retirees do more hours of voluntary work (Caro & Bass, 1997; Moen & Flood, 2013) and retirees are more likely to participate in voluntary work than full-time workers (Moen & Flood, 2013). However, previous research also suggests that people increase participation in voluntary work after retirement (Moen et al., 2000) and non-volunteers are likely to start volunteering when they stop working (Mutchler et al., 2003). Therefore, it is possible that the association between participation in formal social engagement and the probability of being retired may be explained by higher levels of participation among retirees. As previously discussed, the association between social connectedness and retirement is likely to be bi-directional. Therefore, longitudinal data would be needed to more clearly establish the mechanisms involved in this association.

Conclusion

This chapter has identified significant associations between social connectedness indicators and retirement status among males, females and across four age groups. The results showed that these associations vary across indicators and demographic groups. Although these findings indicate that, in general, higher levels of social connectedness are associated with a higher probability of being retired, the mechanism that causes these differences is still not clear. It is possible that those with higher levels of social connectedness, in the context of limited future time perspective, were motivated to retire – in line with the trade-off mechanism presented in the conceptual framework. However, it is also possible that older adults retired for other reasons and higher levels

of social connectedness were a consequence of retirement. This would mean that retirement provided opportunities to expand social connectedness.

With the present cross-sectional data it is not possible to clearly distinguish between these mechanisms. Chapter 7 will explore the dynamics of social connectedness and retirement using longitudinal data from the Household Income and Labour Dynamics in Australia (HILDA) survey.

7. Dynamics of social connectedness and the process of retirement

Chapter 6 showed that higher levels of social connectedness were associated with a higher probability of being retired, mainly in terms of network structure, family network quality, support from friends and formal social engagement. It was also found in Chapter 6 that the associations between social connectedness and retirement status differed by age and more significant associations were found among those aged 65-69. These findings generally support the hypothesis that older adults with higher levels of connectedness would have an incentive to retire and, therefore, retirees would show higher levels of connectedness than workers. However, due to the cross-sectional nature of the data, it was not possible to identify individual trajectories of social connectedness by retirement status. In addition, it was not possible to establish whether the differences in social connectedness between retirees and non-retirees were the result of pre-retirement differences or of changes in social connectedness after retirement.

The literature on social connectedness and age has shown variations in levels of connectedness by age group, as well as age-related changes in social connectedness. For example, older adults tend to have smaller networks relative to younger adults (Cornwell et al., 2008; van Tilburg, 1998), and frequency of contact with friends decreases with age (Shaw et al., 2007). Emotional support tends to be stable over time (Shaw et al., 2007) while instrumental support received increases (van Tilburg, 1998). Nevertheless, these changes over time have not been compared between workers and retirees. The current chapter uses longitudinal data from HILDA to examine these questions. Specifically, this chapter addresses the third and fourth research questions: Do differences in social connectedness by retirement status change over time? How does the process of retirement affect social connectedness?

The HILDA survey, as described in Chapter 4, is a longitudinal household panel study of the Australian population. Items were selected from HILDA to represent the four areas of social connectedness investigated using the SNAP data: network structure, network quality, social support and formal social engagement. The variables available in HILDA differ from SNAP as follows: First, network structure in SNAP is measured separately for family and friends and involves number of people, occasions and duration of contact. In HILDA, a single item measures frequency of social activities with family

and friends. Quality of the network in SNAP includes items indicating the frequency of negative social exchanges with family and separately with friends. HILDA includes measures of satisfaction with the relationships with specific family members, such as spouse/partner and children (included in the analysis), parents and others. In terms of social support, while SNAP includes a measure of size (how many people have provided support), HILDA includes measures of availability of support and quality of support, rated with a 7-point Likert scale from 'strongly disagree' to 'strongly agree'. Finally, formal social engagement is measured with hours per week of voluntary work, as opposed to participation in voluntary work in the last 12 months. Voluntary work participation is only one dimension of formal social engagement. However, a measure of organised group activity, such as the one included in SNAP, was not available in HILDA.

The first section of this chapter (Section 7.1) examines the level of social connectedness and changes over time by retirement status, during the 11-year observation period. This section investigates the third research question: Do differences in social connectedness by retirement status change over time? In terms of the conceptual framework, this section focuses on differences in social connectedness across people in the three phases of the process of retirement (pre-retirement, transition from work to retirement, and retirement) and examines the effect of time on the association between social connectedness and the process of retirement. The second section (7.2) uses longitudinal analysis to identify intra-individual changes in social connectedness before and after retirement, and addresses the fourth research question: How does the process of retirement affect social connectedness? In terms of the conceptual framework, this section examines the effect of the process of retirement on indicators of social connectedness, by measuring older adults' social connectedness while they move from the pre-retirement phase, through the transition from work to retirement, into life in retirement.

7.1. Trajectories of social connectedness and retirement status over time: worker, retiree and worker who retired

Chapter 6 established that there are differences in social connectedness by retirement status, but do differences in social connectedness by retirement status change over time? This section expands the analysis in Chapter 6 in two ways. First, longitudinal data allows expanding the concept of retirement status (retired versus not retired) by adding a third group: those who were working at the beginning of the observation period and

retired during this period: *worker who retired*. This group will be contrasted to those who are retired during the entire period (*retiree*) and those who continue in the workforce for the entire period (*worker*). Second, longitudinal data also allows observation of not only differences by retirement status, but also change over time. The aim is to examine trajectories of social connectedness over time for these three groups who are in three different stages of the retirement process: pre-retirement (*worker*), transition from pre-retirement to retirement (*worker who retired*) and retirement (*retiree*). Baseline levels of social connectedness are compared, as well as the effect of time on social connectedness for each group.

7.1.1. Data and methods

The eleven available waves of the HILDA survey are used in this analysis. These data were collected from 2001 to 2011. As HILDA includes people aged 15 and over, a sub-sample of adults aged 50 and over in Wave 1 were selected. In addition, only those who responded to the 11 waves were included ($n = 2,549$), since it was important for this analysis to be able to identify labour force status at each point in time. From this sample, those who had never been in the labour force or were permanently unable to work in Wave 1 were excluded. People who retired before age 40 were also excluded, as well as those who changed retirement status more than once over the observation period (analytical sample $n = 1,789$).

The mean age for the sample used in this analysis was 61.9 at Wave 1 ($SD = 8.4$). The majority were retired and remained retired for the duration of the study ($n = 1,098$). The mean age of the retired group was 66.0 at baseline ($SD = 7.6$). The group of workers were the youngest with a mean age of 54.1 at baseline ($SD = 4.3$, $n = 372$). Workers who retired during the study period were older than workers and younger than retirees, with a mean age of 56.9 at baseline ($SD = 4.6$, $n = 319$). The average age at retirement for this group is 63.1 ($SD = 4.8$). Among male workers, 90.0% were working full-time at Wave 1, while 63.0% of female workers were working full-time at Wave 1. Among workers who retired, 80.8% of males and 46.9% of females were working full-time at Wave 1. The sample size in the multi-level models is smaller due to missing values (cases with missing values were excluded analysis-by-analysis).

Sample characteristics at baseline for males and females are shown in Table 14. Network structure, defined as frequency of social activities, ranges from 1 ‘less often than once every three months’ to 7 ‘every day’. The variable voluntary work is

measured as hours of voluntary work per week. Satisfaction with relationships ranges from 0 ‘completely dissatisfied’ to 10 ‘completely satisfied’. The social support scales, quality of support and availability of support, range from 1 to 7, and higher numbers indicate higher support. The six social connectedness indicators are used as continuous in the analysis (for full details see Chapter 4, Section 4.1.2).

Table 14. Sample characteristics

Characteristics	Range	Males (<i>n</i> = 831)		Females (<i>n</i> = 958)	
		<i>M</i> / %	<i>SD</i>	<i>M</i> / %	<i>SD</i>
Age		61.4	8.1	62.3	8.6
Retirement status (%)					
Retiree		54.0		67.8	
Worker		25.4		16.9	
Worker who retired		20.7		15.3	
Social connectedness					
Frequency social activities	1-7	4.3	1.5	4.7	1.4
Hours of voluntary work		1.4	4.7	1.4	3.7
Satisfaction relationship with partner	0-10	9.1	1.6	8.7	2.0
Satisfaction relationship with children	0-10	8.7	1.8	9.0	1.5
Quality of support	1-7	5.8	1.2	6.1	1.9
Availability of support	1-7	5.5	1.8	5.5	1.9
Covariates					
Self-rated health	1-5	2.8	1.0	2.7	1.0
Mental health	0-100	77.7	17.1	76.3	17.3
Income		19580.6	36335.3	9713.6	17809.9
Hours caring per week		1.8	8.9	2.8	13.8
Living with partner (%)		79.8		62.1	

Source: HILDA

Multilevel mixed-effects models are used to examine differences by retirement status in level of social connectedness (level 2, between-person differences) and trajectories of social connectedness over time (level 1, within-person effects). The random effects in these models allow the intercept to vary across individuals (random intercept model). Similarly, when there was evidence of differences in slopes across individuals (according to a likelihood ratio test, not shown), random coefficient models were used (Rabe-Hesketh & Skrondal, 2012). In addition, interaction effects between group – retiree, worker, worker who retired – and time were incorporated in the analysis when analysis of deviance showed that interactions contributed to improve model fit (not shown). This analysis allows exploring differences in trajectories of social

connectedness – 11 years – by retirement group. Time is centred at baseline in all models.

Each model has two parts. The fixed effects part models the average effect of the predictors on the outcome variable. The second part is the model for the variances, that is, the random effects model. This part shows “how errors are distributed and related over time and persons” (Hoffman & Stawski, 2009, p. 101). The residuals represent the difference between each outcome and the mean outcome estimated by the fixed effects. The random intercept is person-specific and represents the difference between the mean outcome estimated by the fixed effects and each person’s mean across waves (Hoffman & Stawski, 2009). The coefficient for the time slope in the random effects part represents between-person random deviation for time. Finally, the time slope x intercept coefficient represents the correlation between the random intercept and the random slope. The random effects are part of the multi-level model specification but are not of primary interest in this analysis. Therefore, they are not discussed in the results.

All models control for time-invariant covariates measured at baseline (age, self-rated health, mental health, hours of caring, disposable income, and living arrangements). The models were conducted using restricted likelihood (reml) and unstructured covariance structure (Singer & Willet, 2003). As discussed in previous chapters, males and females usually experience different patterns of labour force participation and retirement transitions (e.g., Jefferson, 2005; Warren, 2008; Warren & Oguzoglu, 2010) and can differ significantly in the characteristics of their social connectedness (e.g., Antonucci & Akiyama, 1987a; Windsor et al., 2016). Therefore, following the methods used in previous chapters, the mixed-effects models are conducted for males and females separately. Retirees are the reference category in all models. Significant differences identified when using a different reference category are mentioned in the text.

7.1.2. Results

Table 15 shows the main effects and interaction effects models for frequency of social activities, the measure used to represent network structure. Likelihood tests (not shown) showed that the slopes were significant, therefore, random coefficient models were used. The main effects model for males shows that workers report marginally lower frequency of social activities relative to retirees ($p = 0.084$). The interaction effects indicate that the effect of time is different between workers and retirees, between

workers who retired and retirees, and between workers who retired and workers ($b = 0.03$, $SE = 0.02$, $p < 0.05$, not shown in table).

Predicted values in Figure 10 illustrate this interaction effect (upper figure), showing that workers who retired, who start with low frequency, increase their frequency of social activities as they get older, while retirees, who start at a higher level, reduce their frequency of social activities over time. In contrast, workers maintain a stable frequency of social activities over the observation period.

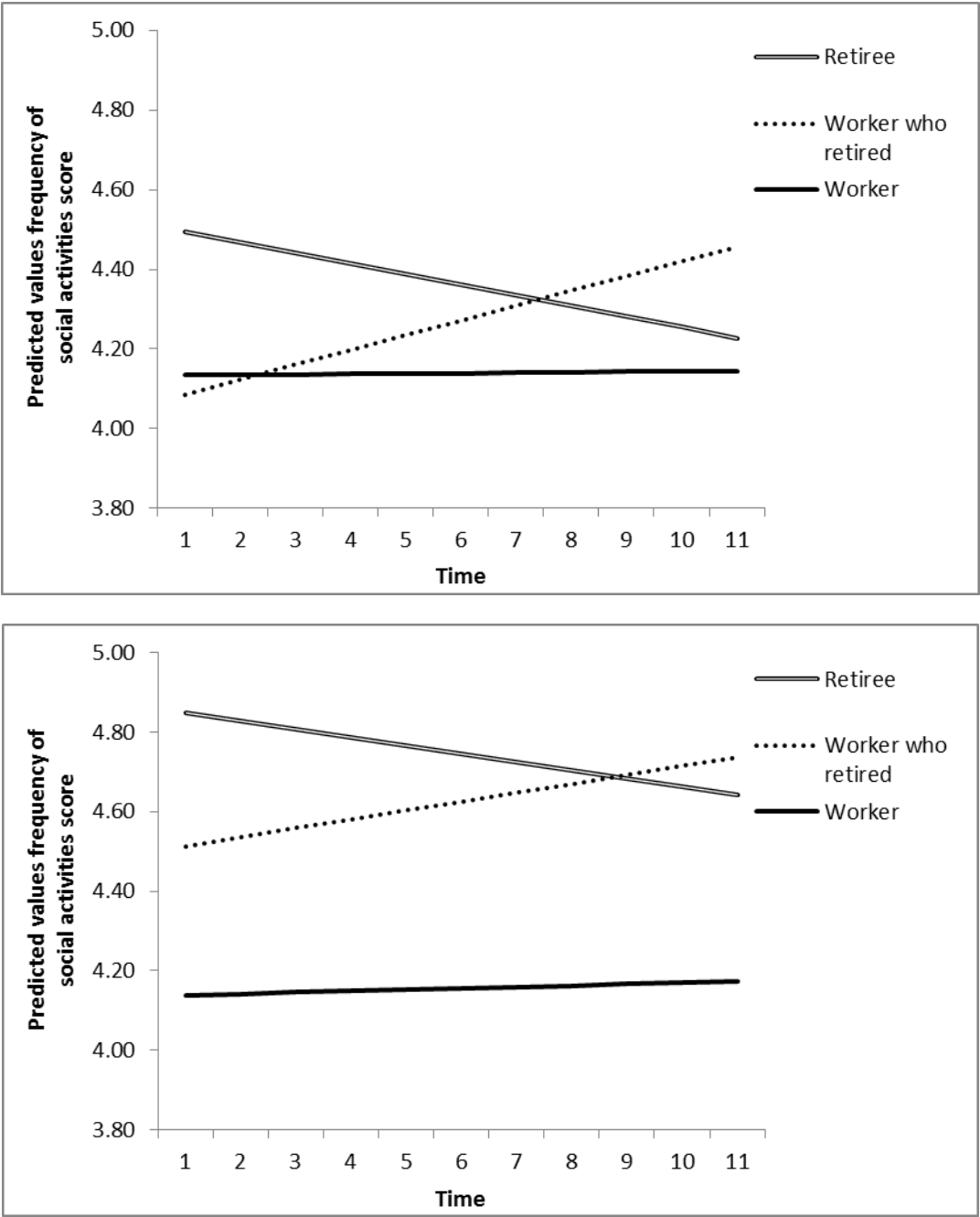
The main effects model for females in Table 15 indicates that workers report lower frequency of social activities relative to retirees. In addition, workers who retired show higher frequency of social activities relative to workers ($b = 0.45$, $SE = 0.12$, $p < 0.01$, not shown in table). The interaction effects indicate that time has a different effect across retirement statuses. Retirees show a negative effect of time on frequency of social activities compared with the constant frequency found among workers. The larger interaction effect for workers who retired relative to retirees shows a greater difference in the effect of time between these groups. While frequency of social activities decreases over time among retirees, it increases over time among workers who retired (Figure 10, lower figure).

Table 15. Random coefficient regression models network structure: frequency of social activities with family and friends males and females

Parameter	Males		Females	
	Main effects	Interaction effects	Main effects	Interaction effects
	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)	Coeff. (SE)
Fixed effects				
Time	-0.01 (0.00)	-0.03** (0.01)	-0.01* (0.00)	-0.02** (0.01)
Age (baseline, centred 60)	0.01 (0.01)	0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Worker (ref: retiree)	-0.22 (0.13)	-0.36* (0.14)	-0.61** (0.14)	-0.71** (0.15)
Worker who retired (ref: retiree)	-0.09 (0.12)	-0.41** (0.14)	-0.16 (0.13)	-0.34* (0.14)
Worker x time (ref: retiree x time)		0.03* (0.01)		0.02* (0.01)
Worker who retired x time (ref: retiree x time)		0.06** (0.01)		0.04** (0.01)
Random effects				
Time slope	0.10 (0.01)	0.10 (0.01)	0.09 (0.00)	0.09 (0.00)
Intercept	1.11 (0.04)	1.10 (0.04)	1.00 (0.03)	0.99 (0.03)
Time slope x intercept	-0.47 (0.04)	-0.46 (0.04)	-0.30 (0.05)	-0.29 (0.05)
Residual	1.04 (0.01)	1.04 (0.01)	0.95 (0.01)	0.95 (0.01)
Log restricted-likelihood	-12498	-12494	-13150	-13150
<i>n</i>		736		892

Note. * $p < 0.05$; ** $p < 0.01$. ref = reference category. Source: HILDA

Figure 10. Interaction effect time and retirement status males (upper panel) and females (lower panel): frequency of social activities with family and friends



Source: HILDA.

Results for formal social engagement are presented in Table 16. This analysis includes respondents who have not volunteered (hours = 0). The main effects models for males and females indicate a positive association between time and hours of voluntary work. That is, males and females increase their engagement in voluntary work over time, although this effect is small. The main effects models for males and females show that retirees do more hours of voluntary work than workers and workers who retired do not differ from retirees or workers (not shown in table).

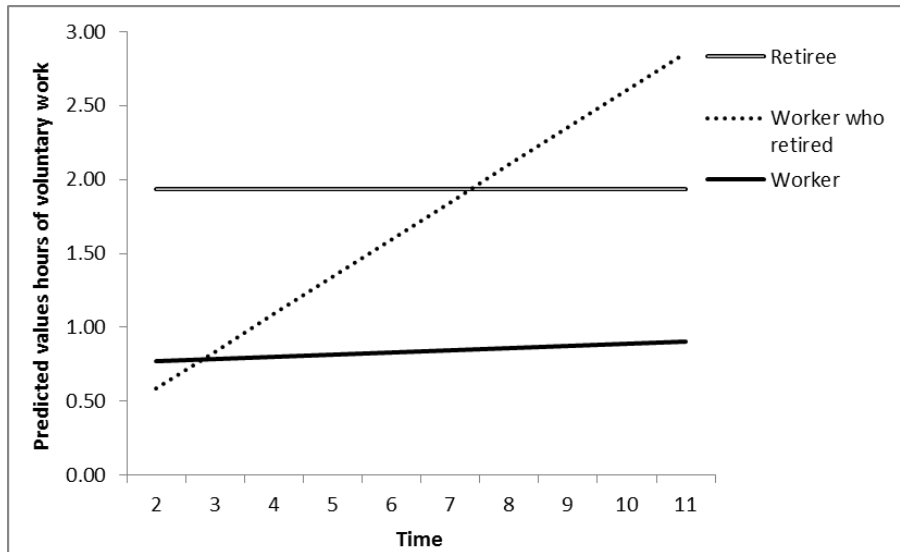
Although results show that male workers who retired do not do more hours of voluntary work than workers or retirees, the effect of time is significantly larger among males in this group. The interaction effect, illustrated with predicted values in Figure 11, shows a large increase in hours of voluntary work as workers who retired get older, compared with relatively stable levels of engagement among retirees and workers ($b = 0.24$, $SE = 0.06$, $p < 0.01$, not shown in table). Among females, analysis of deviance indicated that including time interactions did not contribute to model fit. Therefore, only the main effects model is presented for females.

Table 16. Random coefficient regression models formal social engagement: hours of voluntary work males and females

Parameter	Males				Females	
	Main effects		Interaction effects		Main effects	
	Coeff. (SE)		Coeff. (SE)		Coeff. (SE)	
Fixed effects						
Time	0.06**	(0.02)	0.00	(0.03)	0.04**	(0.01)
Age (baseline, centred 60)	-0.02	(0.02)	-0.02	(0.02)	-0.01	(0.02)
Worker (ref: retiree)	-1.12**	(0.43)	-1.18*	(0.47)	-0.89*	(0.45)
Worker who retired (ref: retiree)	-0.56	(0.42)	-1.60**	(0.47)	-0.65	(0.41)
Worker x time (ref: retiree x time)			0.01	(0.05)		
Worker who retired x time (ref: retiree x time)			0.25**	(0.05)		
Random effects						
Time slope	0.44	(0.02)	0.43	(0.02)	0.44	(0.02)
Intercept	3.60	(0.12)	3.57	(0.12)	3.43	(0.11)
Time slope x intercept	-0.41	(0.04)	-0.40	(0.04)	-0.45	(0.04)
Residual	2.79	(0.03)	2.79	(0.04)	2.79	(0.03)
Log restricted-likelihood	-17863		-17855		-19484	
<i>n</i>	736				892	

Note. * $p < 0.05$; ** $p < 0.01$. Source: HILDA.

Figure 11. Interaction effect time and retirement status males: hours of voluntary work



Note. Hours of voluntary work was not available in Wave 1. Predicted values are presented from Wave 2 onwards. Source: HILDA.

Results for satisfaction with relationship with partner and children – measures of network quality – are presented in Table 17 and Table 18. No significant effects of retirement status on satisfaction with relationship with partner were found among males and females, and the inclusion of time interactions did not improve model fit. Table 17 shows a negative effect of time for males and females indicating that, as people get older, their satisfaction with their relationship with partner decreases, regardless of retirement status. In terms of relationship with children (Table 18) age at baseline has a significant effect, showing that older males and females report higher satisfaction with their relationship with children than their younger counterparts. However, a negative effect of time among females shows that as females get older, the quality of their relationship with children decreases. In addition, female workers who retired are more satisfied with their relationship with children than workers ($b = 0.36$, $SE = 0.14$, $p < 0.05$, not shown in table). Retirement status and time did not have a significant association with satisfaction with relationship with children among males.

Table 17. Random coefficient regression models network quality: satisfaction with relationship with partner males and females

	Males		Females	
	Main effects		Main effects	
Parameter	Coeff. (SE)		Coeff. (SE)	
Fixed effects				
Time	-0.02**	(0.01)	-0.03**	(0.01)
Age (baseline, centred 60)	0.01	(0.01)	0.029	(0.01)
Worker (ref: retiree)	-0.05	(0.16)	-0.06	(0.25)
Worker who retired (ref: retiree)	-0.01	(0.16)	0.28	(0.23)
Random effects				
Time slope	0.10	(0.01)	0.12	(0.01)
Intercept	1.16	(0.04)	1.51	(0.05)
Time slope x intercept	-0.35	(0.06)	-0.27	(0.06)
Residual	1.06	(0.01)	1.05	(0.01)
Log restricted-likelihood		-9697	-8227	
n		579	553	

Note. * $p < 0.05$; ** $p < 0.01$. Source: HILDA.

Table 18. Random coefficient regression models network quality: satisfaction with relationship with children males and females

	Males		Females	
	Main effects		Main effects	
Parameter	Coeff. (SE)		Coeff. (SE)	
Fixed effects				
Time	-0.01	(0.01)	-0.02**	(0.01)
Age (baseline, centred 60)	0.03**	(0.01)	0.02**	(0.01)
Worker (ref: retiree)	0.22	(0.20)	-0.21	(0.16)
Worker who retired (ref: retiree)	0.21	(0.20)	0.14	(0.15)
Random effects				
Time slope	0.11	(0.01)	0.10	(0.01)
Intercept	1.57	(0.05)	1.23	(0.04)
Time slope x intercept	-0.31	(0.06)	-0.46	(0.05)
Residual	1.14	(0.01)	1.10	(0.01)
Log restricted-likelihood		-11884	-13069	
<i>n</i>		668	818	

Note. * $p < 0.05$; ** $p < 0.01$. Source: HILDA.

Table 19 and Table 20 present the results for the two social support scales. In terms of quality of support, no significant effects of retirement status or time were found among males. Among females, in contrast, workers who retired showed better quality of support than workers ($b = 0.24$, $SE = 0.08$, $p < 0.01$, not shown in table). Availability of support shows a significant and positive time effect among males and females and a negative effect of age (Table 20). That is, availability of support increases over time, but older respondents report lower availability of support than younger respondents. In addition, among females, workers who retired report higher availability of support relative to retirees and workers ($b = 0.41$, $SE = 0.13$, $p < 0.01$, not shown in table). The difference between female workers who retired and workers is larger in terms of availability of support relative to quality of support.

Table 19. Random coefficient regression models social support: quality of support males and females

Parameter	Males	Females
	Main effects Coeff. (SE)	Main effects Coeff. (SE)
Fixed effects		
Time	-0.00 (0.00)	-0.00 (0.00)
Age (baseline, centred 60)	0.00 (0.00)	0.00 (0.00)
Worker (ref: retiree)	0.15 (0.09)	-0.11 (0.08)
Worker who retired (ref: retiree)	0.11 (0.09)	0.14 (0.09)
Random effects		
Time slope	0.06 (0.01)	0.06 (0.01)
Intercept	0.70 (0.03)	0.66 (0.03)
Time slope x intercept	-0.28 (0.08)	-0.41 (0.07)
Residual	0.92 (0.01)	1.00 (0.01)
Log restricted-likelihood	-11359	-13146
<i>n</i>	736	893

Note. * $p < 0.05$; ** $p < 0.01$. Source: HILDA.

Table 20. Random coefficient regression models social support: availability of support males and females

Parameter	Males		Females	
	Main effects		Main effects	
	Coeff. (SE)		Coeff. (SE)	
Fixed effects				
Time	0.01*	(0.01)	0.05**	(0.01)
Age (baseline, centred 60)	-0.01*	(0.01)	-0.02**	(0.01)
Worker (ref: retiree)	-0.05	(0.13)	-0.13	(0.15)
Worker who retired (ref: retiree)	-0.08	(0.12)	0.28*	(0.13)
Random effects				
Time slope	0.07	(0.01)	0.07	(0.01)
Intercept	0.97	(0.04)	1.11	(0.04)
Time slope x intercept	-0.21	(0.09)	-0.51	(0.06)
Residual	1.29	(0.01)	1.34	(0.01)
Log restricted-likelihood		-13977	-15885	
<i>n</i>		736	891	

Note. * $p < 0.05$; ** $p < 0.01$. Source: HILDA.

The results presented in this section show that the association of time with social connectedness varies across social connectedness indicators and sex differences are also identified. Time has a negative effect on frequency of social activities and a positive effect on hours of voluntary work among males and females. In relation to quality of relationships, a negative effect of time on satisfaction with relationship with partner (among males and females) and relationship with children (among females) were found. In terms of social support, time was associated with increased perception of availability of support among both males and females.

The analyses in this section compared levels and trajectories of social connectedness across three retirement statuses: Findings indicate that there are differences in levels of social connectedness by retirement status at baseline. Among males, frequency of social activities and hours of voluntary work differed by retirement status. Among females, differences by retirement status were found regarding frequency of social activities, hours of voluntary work, relationship with children, quality of support and availability of support. Findings also indicate that the effect of time differs by retirement status in terms of frequency of social activities (males and females) and hours of voluntary work (males).

7.2.Change in social connectedness during the process of retirement

Section 7.1 examined levels and trajectories of social connectedness by comparing people in three different phases of the retirement process. This section focuses on a subsample of workers who retired and follows them throughout their process of retirement in order to investigate short- and medium-term changes in social connectedness before and after retirement.

7.2.1. Data and methods

Eleven waves of HILDA are used in this analysis, but the analytical sample only includes respondents aged 50 and over (range 50-74) who were working at the beginning of the observation period and who subsequently became completely retired – and remained retired – between waves four and eight ($n = 166$; 89 males and 77 females). This sample selection allowed observing three waves of data before retirement was reported (waves from 1 to 5) and three waves of data after retirement was reported (waves from 5 to 11)⁹. The mean age of this sample at Wave 1 of the study was 57.4 ($SD = 4.7$) and males were a year and a half older than females on average ($M = 58.2$, $SD = 4.9$, and $M = 56.6$, $SD = 4.5$, respectively). Retirement is defined by exiting the labour force and not returning to paid work during the study period. Although this may not be the reality for many older workers, the focus of this analysis is to identify changes in social connectedness by comparing individuals' social connectedness when they are in paid work – with the constraints and opportunities that this provides for social connectedness – with their social connectedness when they are fully retired and no longer have these constraints and opportunities. The average age at retirement of this sample was 62.5 ($SD = 5.5$), and it was higher for males than females ($M = 63.3$, $SD = 4.9$ and $M = 61.6$, $SD = 4.5$ respectively).

The analytical approach involved examining individuals' social connectedness scores across waves, separately for males and females. The same social connectedness indicators used as dependent variables in Section 7.1 were investigated here: frequency of social activities (measure of network structure), hours of voluntary work (measure of formal social engagement), satisfaction with the relationship with partner and children (measures of network quality), and quality and availability of support (measures of social support). Social connectedness was measured three waves before retirement was

⁹ Only respondents who were working at baseline were included as it was important to establish continued labour force participation up until complete retirement was reported, as far as possible.

first observed, at the time that retirement was observed and three waves after retirement was observed. The data had to be re-structured in order to align retirement at different waves to time ‘t’ (for full details see Section 4.2.2). Fixed effects analysis was then conducted to identify changes in social connectedness indicators over time, controlling for time-variant partnership status, self-rated health, mental health, income, reported injury to self and reported injury to family member¹⁰. This method allows controlling for individual heterogeneity facilitating the investigation of within-person developmental changes over time (Singer & Willet, 2003). Time was measured as a discrete variable with the measurement occasion when retirement was first observed (‘t’) as the reference category. Time ‘t’ is referred to as ‘the time of retirement’ in the following sections. The scores at time ‘t’ were contrasted with pre-retirement scores (‘t-3’, ‘t-2’, ‘t-1’) and post-retirement scores (‘t+1’, ‘t+2’, ‘t+3’). The contrasts presented in the figures refer to the differences with the reference time ‘t’ scores. Levels of significance up to $p < 0.1$ are considered, because of the small sample size. Figures presented in the following section are predicted values of the dependent variables obtained using the ‘marginsplot’ post-estimation function in Stata. Tables with regression coefficients for time for significant models are presented in Appendix 3.

7.2.2. Results

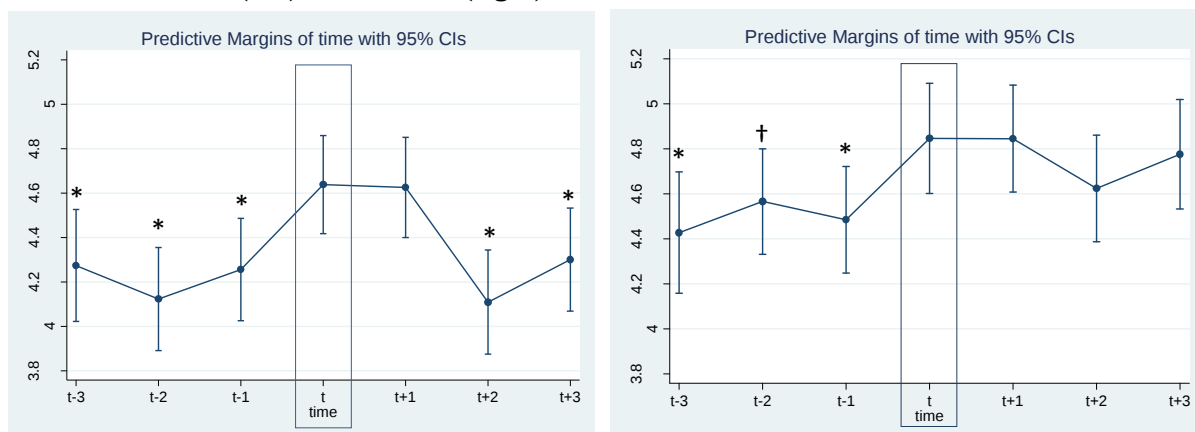
Results for frequency of social activities show a different pattern for males and females (Figure 12). Among males, an increase in the frequency of social activities is observed at the time of retirement and it is maintained one wave after retirement (time ‘t’ and time ‘t+1’). The frequency of social activities at these two time points is significantly higher than that in the three pre-retirement waves. However, this increase in social activities is not maintained beyond ‘t+1’; frequency of social activities two and three waves after retirement was reported – that is, in ‘t+2’ and ‘t+3’ – is not different from pre-retirement levels and it is significantly lower than the frequency reported at time ‘t’. Among females, there is a similar increase in frequency of social activities at the time of retirement compared with the three pre-retirement waves (although at time ‘t-2’ the difference is only marginally significant $p = 0.099$), but this level is maintained for the rest of the observation period. That is, the frequency of social activities two and three waves after retirement is not different from the frequency reported at the time of retirement (Figure 12).

¹⁰ Injury to self and injury to family member are time-variant measures. Therefore they were not included in the analysis in Section 7.1, which only controlled for time-invariant covariates.

Figure 13 shows the predicted values for voluntary work. The pattern observed for hours of voluntary work is different to the pattern observed for social activities. Males' engagement in voluntary work shows a linear pattern of increase. Even though there were no significant differences in the number of hours between pre-retirement waves and the time of retirement, the last two time points observed show more hours of voluntary work compared with the hours of participation at the time of retirement (last time point marginally significant $p = 0.099$). The trend for females is different. While an increase in hours of voluntary work is observed at retirement compared with the first two time points, no further increase – or decrease – in hours occurs after retirement. It is worth noting that the control variable time spent caring for ill or disabled relatives had opposite effects on hours of voluntary work for males and females. Among males, more hours spent caring resulted in less hours of voluntary work. However, among females, more hours spent caring resulted in more hours of voluntary work.

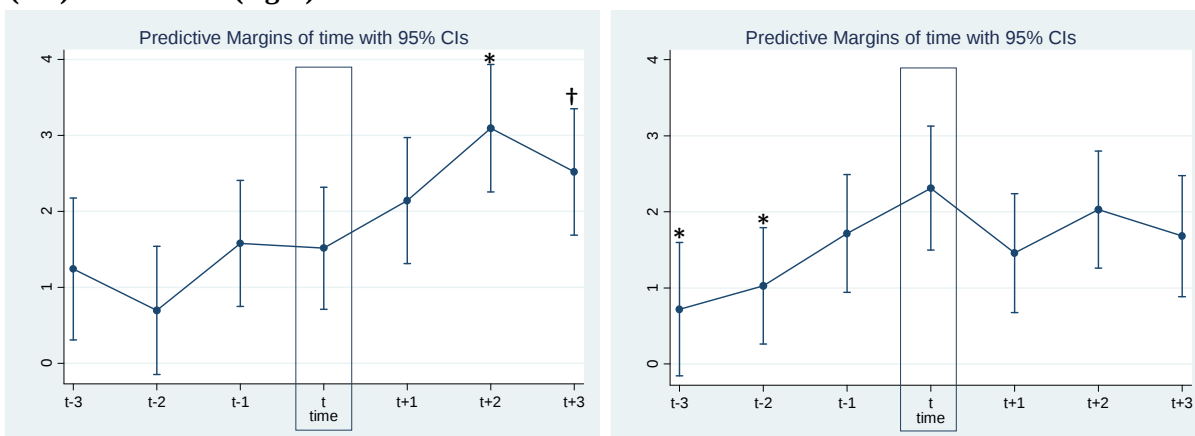
Predicted values for quality of relationship with partner and children are shown in Figure 14 and Figure 15, respectively. The fixed-effects model for relationship with partner was not significant among males or females, and no association between retirement and relationship with partner was found. This result indicates that other factors not included in the current model are more important in predicting satisfaction with relationship with partner over time. Regarding relationship with children, the highest level of satisfaction with relationship with children among males is reported at the time of retirement ('t'). This level is higher than 't-3' ($p = 0.082$), 't+2' and 't+3' (Figure 15). The shape of the curve illustrates a gradual increase in satisfaction until it peaks at the time of retirement and then a slight decrease up to the last two observation points, where satisfaction is significantly lower than at the time of retirement. In contrast, results for females show no association between retirement and relationship with children. Fixed-effects models for quality of support and availability of support were not significant for males or females.

Figure 12. Network structure: predicted values of frequency of social activities with family and friends males (left) and females (right)



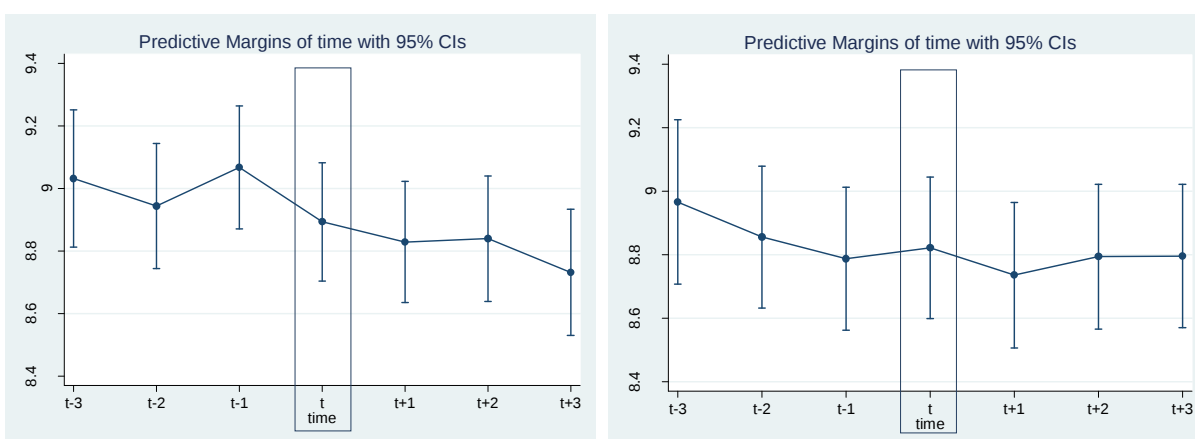
Note. † $p < 0.1$; * $p < 0.05$. Source: HILDA.

Figure 13. Formal social engagement: predicted values of hours of voluntary work males (left) and females (right)



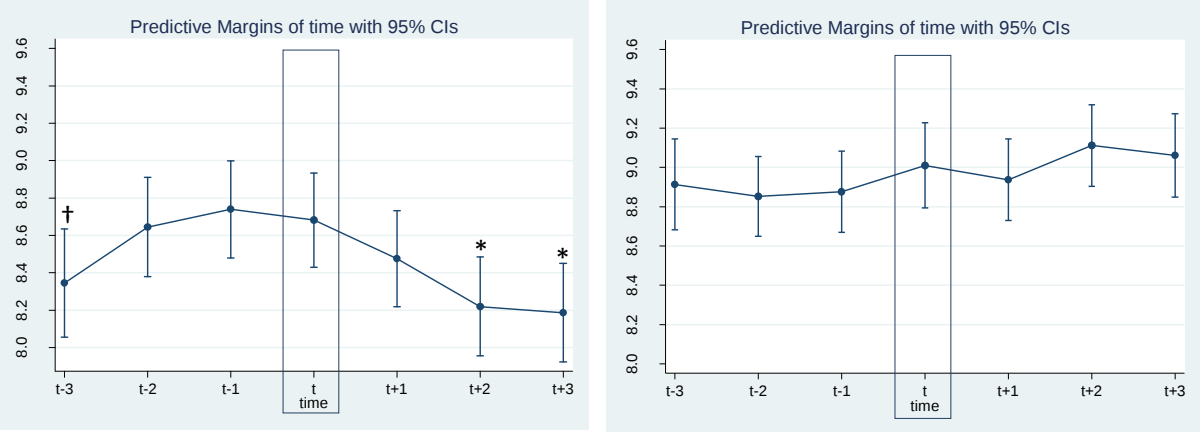
Note. † $p < 0.1$; * $p < 0.05$. Source: HILDA.

Figure 14. Network quality: predicted values of satisfaction with relationship with partner males (left) and females (right)



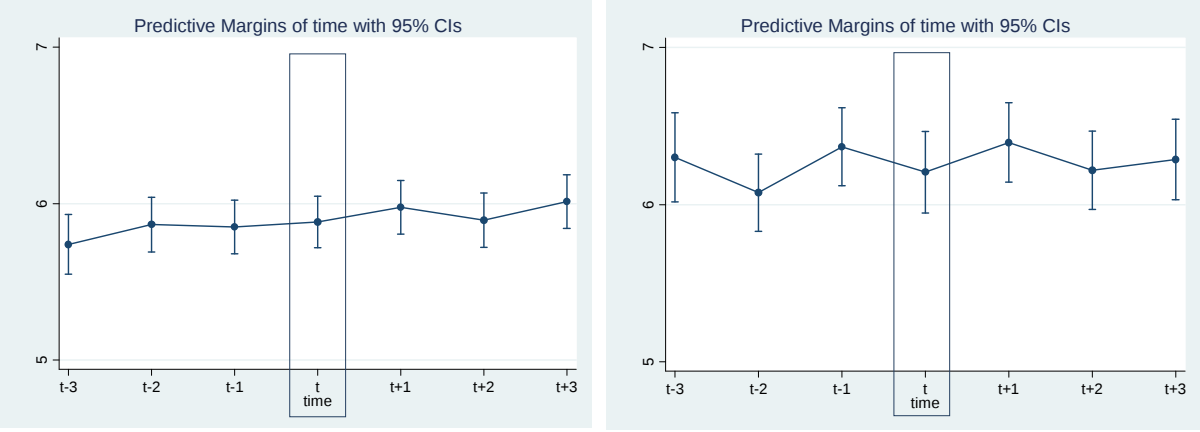
Note. † $p < 0.1$; * $p < 0.05$. Source: HILDA.

Figure 15. Networks quality: predicted values of satisfaction with relationship with children males (left) and females (right)



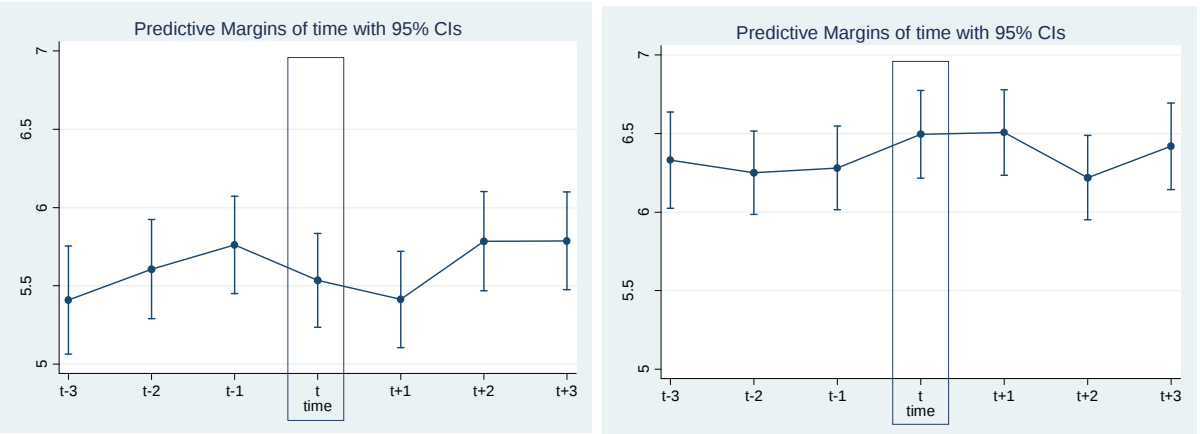
Note. † $p < 0.1$; * $p < 0.05$. Source: HILDA.

Figure 16. Social support: predicted values of quality of support males (left) and females (right)



Note. † $p < 0.1$; * $p < 0.05$. Source: HILDA.

Figure 17. Social support: predicted values of availability of support males (left) and females (right)



Note. † $p < 0.1$; * $p < 0.05$. Source: HILDA.

7.3.Discussion

This chapter examined the association between trajectories of social connectedness and the process of retirement using longitudinal data. The first section (7.1) focused on differences in level of social connectedness by retirement status and explored differential effects of time on social connectedness by retirement status. The second section (7.2) identified changes in social connectedness throughout the process of retirement by observing social connectedness indicators before retirement, at the time of retirement and after retirement.

Overall, the findings in this chapter indicate that differences in level of social connectedness by retirement status, the differential effect of time on social connectedness by retirement status and changes in social connectedness throughout the process of retirement, vary across the different indicators of social connectedness. The findings are discussed in the following sections.

Social connectedness and age

The first section (7.1) showed that frequency of social activities with family and friends decreases over time among females (main effects model). It has been shown in the literature that contact with friends tends to decrease with age (Shaw et al., 2007) and older adults' social networks tend to become smaller (Antonucci & Akiyama, 1987b; Gurung et al., 2003). The decrease observed in the frequency of social activities with family and friends could be related to a reduction of the network size over time, resulting in lower frequency of contact. Socioemotional selectivity theory hypothesises that as part of a developmental process of adaptation, older adults reduce their social networks at older ages, keeping only close and emotionally satisfying relationships. However, it is not possible to establish this with certainty as there are no measures of actual network size available in HILDA. On the other hand, reduced frequency of social activities may also be associated with other age-related changes – such as declines in health or financial difficulties – which could prevent older adults from continued contact with network members.

On the contrary, time was associated with an increase in hours of voluntary work among males and females. That is, although with age individuals are spending less time with friends and family, they are increasing their engagement in volunteering, potentially maintaining their overall level of engagement. Volunteering may also fill other roles at older ages – beyond social contact – as a meaningful activity that contributes to

generativity (Carlson, Seeman, & Fried, 2000) and well-being (e.g., Morrow-Howell, 2010), and provides the benefits of a productive role that could have been previously provided by paid work, particularly in the context of other role losses at older ages (Greenfield & Marks, 2004). Previous research has also shown that time spent in voluntary work does not decrease with age, as opposed to time spent in paid work (Moen & Flood, 2013).

Satisfaction with the relationship with partner showed a decrease over time for males and females, and satisfaction with the relationship with children decreased over time among females. The literature has shown that males receive support mainly from their partners while females tend to receive support from diverse sources such as friends and children (Gurung et al., 2003; Antonucci & Akiyama, 1987a). Research has also shown that instrumental support received increases with age among older adults (Shaw et al., 2007; van Tilburg, 1998). The fact that older age is associated with increasing age-related declines could generate some strain in the relationship between females and their children as sources of support, as support needs increase. In addition, females are more likely to be unpartnered compared with males, potentially needing more support from children in old age, while males can rely on partners. Increased need of support from males' spouses could also generate tensions between partners as they get older.

Emotional support has generally been reported to be stable over time (Gurung et al., 2003; Shaw et al., 2007). Consistently, results of this analysis indicate no change in the quality of the social support available. However, an increase in the availability of support over time for both males and females was found. This finding could be related to the documented increase over time in instrumental support received among older adults (e.g., Shaw et al., 2007; van Tilburg, 1998). A longitudinal study of social support and retirement found that support increased over time (Bossé et al., 1993). This study used a combined measure of support including number of confidants and availability of support in times of crises. This measure to some extent combines emotional support and instrumental support. Differences in the definition and measurement of social connectedness indicators make it difficult to directly compare studies. Nevertheless, it is consistent across studies that levels of support do not decrease over time. Although availability of support did not decrease over time in the present study, respondents who were older at baseline had lower availability of support than those who were younger.

Retirement status

Analyses in Chapter 6 indicated that retirees have higher levels of social connectedness in terms of network structure and quality of relationships, particularly among females and those aged 65-69. Consistently, results from Section 7.1 show that female retirees had higher frequency of social activities than workers (the measure of network structure used in this analysis). In addition, frequency of social activities was higher for female workers who retired than for workers. No significant differences in frequency of social activities by retirement status were found among males. Nevertheless, a significant interaction effect among males and females indicated that the effect of time on frequency of social activities differed by retirement status. Among males, results showed that retirees have slightly higher frequency of social activities at baseline and frequency declines over time. Workers who retired, in contrast, start lower and increase, while workers' frequency of social activities remains stable. Among females, retirees also start high and decline, but the difference in frequency between retirees and workers is larger among females. In fact, female workers who retired also start significantly higher than workers, indicating that their higher frequency of social activities was not a result of retirement, as it probably was for males. Male and female workers show similar frequency of social activities in the predicted values. A previous longitudinal study found a general decrease in network structure over time (measured as network size and frequency of contact), but no interactions between retirement status and time were found in this study (Bossé et al., 1993). It is possible that a longer observation period could have shown different results. This point will be further discussed in the next section.

Results regarding voluntary work showed that male and female retirees do more hours of voluntary work than workers, which is consistent with findings from previous research (e.g., Caro & Bass, 1997; Moen & Flood, 2013). In addition, among males, the effect of time on hours of voluntary work differed by retirement status. While retirees and workers maintained similar levels of engagement in voluntary work over the observation period, workers who retired significantly increased their participation. This is also consistent with previous research. Research has shown that workers who stop working are more likely to start volunteering than those who continue working (Mutchler et al., 2003) and, among volunteers, retirement is associated with an increase in participation (Moen et al., 2000). The findings for males are consistent with the time trade-off between paid work and voluntary work found by Moen and Flood (2013).

Importantly, this interaction effect was only found among males. Among females, hours of voluntary work increased over time, regardless of retirement status. This suggests that retiring from paid work does not have the same impact on females than on males, who significantly increased their participation in voluntary work with retirement.

This finding could be partly explained by sex differences in the time trade-off between paid work and voluntary work. Moen and Flood (2013) found that while females who were working full-time did less hours of voluntary work than females working part-time, self-employed or not working, males who were doing any work for pay did less hours of voluntary work than those not working. In addition, it is possible that because fewer females in this sample were working full-time at baseline compared with males, retirement from work could have had a smaller impact in terms of engagement in other productive activities. At the same time, females are more likely than males to engage simultaneously in multiple activities over the life course (Loh & Kendig, 2013; Topa, Moriano, Depolo, Alcover, & Morales, 2009). Therefore, females' participation in other productive activities, such as voluntary work, might be less likely to be affected by retirement, relative to males'.

The present analysis of HILDA showed that female workers who retired reported higher levels of quality of support relative to workers and higher availability of support than workers and retirees at baseline. This finding suggests that higher levels of support could have contributed to females' retirement decision. Previous research has shown that females with higher levels of support have a higher preference for early retirement (Elovainio et al., 2003). It is possible that having higher levels of support could have motivated retirement among females in this sample. It is important to note that retirement status was not associated with differences in social support among males. Similarly, Elovainio et al. (2003) only found an association between social support and retirement preference among females and Bossé et al. (1993) found no association between social support and retirement in their sample of males. This is probably reflecting the higher level of connectivity of females, which results in a higher interconnection between their relationships, work and retirement. Moreover, as previously mentioned, females are more likely to receive support from a number of sources while males tend to rely on spouses for support (Antonucci & Akiyama, 1987a; Gurung et al., 2003). Therefore, males' retirement transition would be less likely to be influenced by support networks beyond their spouse.

Change in retirement status

Consistent with the findings of the analysis of social connectedness by retirement status presented in Section 7.1, results from the pre-post analysis of the process of retirement in Section 7.2 showed that workers who retired do increase the frequency of social activities with family and friends at the time of retirement. This finding is consistent with the concept of the segmentation of the life course between a focus on work and family responsibilities during young and middle adulthood and a focus on social relations and leisure in older adulthood (Freund et al., 2009). However, a ‘honeymoon’ effect was observed for males, where the increase in social activities at retirement was followed by a return to pre-retirement levels of activity. This ‘honeymoon’ effect was described by Atchley and Barusch (2004) as a possible pathway in the ‘retirement’ stage – phase two of the six phases of the retirement process – in which recent retirees spend a great amount of time doing things that they did not have time to do before. Other authors have also described similar effects, including a number of positive changes following retirement and increased optimism and enthusiasm (Evans, Ekerdt, & Bossé, 1985; Gall, Evans, & Howard, 1997). However, these authors find that these emotions decrease after some time in retirement. It is interesting that this effect is only observed for males and not for females. Females engage in multiple activities over the life course (Loh & Kendig, 2013) and it is likely that males, as being primarily involved in a work role, may not have taken as much time for social activities outside the work context in the past. It is possible that social activities with family and friends are not a main part of males’ identity. As a result, after increased engagement during the ‘honeymoon’ phase, they may realise that social activities will not replace the productive role filled by paid work in the past, leading to a reduction in the frequency of social activities back to pre-retirement levels. In other words, results suggest that the increase in frequency of social activities at retirement is not part of males’ retirement routine.

The ‘honeymoon’ effect observed for males’ social activities illustrates the importance of studying processes longitudinally. If frequency of social activities was only observed before retirement and three years after retirement, as it was the case in Bossé et al.’s study (1993), no change would have been observed. This comparison demonstrates the advantage of the availability of several waves of data, which allows investigating trajectories and dynamics of change.

Regarding voluntary work, the finding of a stronger positive time effect on hours of voluntary work among male workers who retired (Section 7.1) was confirmed in the

analysis of the process of retirement (Section 7.1). Males show a linear increase in the hours of participation in voluntary work throughout the transition, but the largest increase is between the time of retirement and two waves after retirement. Males generally spend most of their adult life in the labour force and therefore are likely to be more identified with work-related roles. They are more likely than females to work full-time continuously (Han & Moen, 1999; Loh & Kendig, 2013) and less likely to engage in other productive activities while working (Loh & Kendig, 2013; Moen & Flood, 2013). Therefore, males may be more likely to compensate the lack of productive role identity after leaving the workforce with another productive activity such as volunteering, which helps to maintain social belonging and sense of purpose. As it could be expected, results for females are again different. Although females also increase the hours of voluntary work at the time of retirement relative to the two first time points, no further increase is observed after retirement. The analysis in Section 7.1 did not find a larger increase in hours of voluntary work among female workers who retired, as it was the case for males. Taken together, these results show that the role of voluntary work in the process of retirement is different for males and females.

The fact that hours of voluntary work start increasing before retirement among males and females could be illustrating different processes. First, it could be showing some level of retirement preparation or anticipation. Some older adults may be getting involved in a productive activity before leaving the workforce as part of making a transition. Second, this pattern of involvement in voluntary work may reflect dissatisfaction with current employment, later leading to retirement. A third alternative is that older adults became involved in voluntary work for other reasons, and the desire to increase their voluntary work participation motivated their retirement. These are areas for further investigation.

No significant associations between change in retirement status and quality of relationship with partner were found among males and females. This finding is not consistent with previous research showing a short-term negative effect of retirement on marital quality (Moen, Kim, & Hofmeister, 2001). It is possible that elements of the retirement process such as reasons for retirement, retirement timing or voluntariness of retirement could explain this inconsistency. For example, retiring because of ill health, or retiring earlier than expected, particularly because of factors beyond the workers' control, are more likely to generate stress and conflict within the couple.

Among males, satisfaction with the relationship with children shows a significant association with the process of retirement. The random effect models showed no effect of time or retirement status on relationship with children, but the pre-post analysis of the retirement process in Section 7.2 found a gradual increase in satisfaction up to the time of retirement and then a significant decrease. The peak in satisfaction at the time of retirement may reflect increased involvement with children in the context of more time availability. Moreover, the increase in frequency of social activities previously discussed may have involved greater contact with children. However, similar to the ‘honeymoon’ effect observed for frequency of social activities, two years after retirement satisfaction with relationship with children is back to pre-retirement levels. These two peak and then ‘back-to-normal’ effects could be related to the expectation that retirement is the time to do things that males did not have the time to do during their busy mid-life working years (Beehr, 1986; Freund et al., 2009), but eventually, their life style continues to be the same as it was pre-retirement and these activities do not form part of males’ retirement routines in the long term.

Regarding social support and consistent with Bossé and colleagues’ longitudinal study (Bossé et al., 1993), the pre-post analysis of the process of retirement shows that retiring from the workforce has no effects on the perceived quality of the support network or the perceived availability of support. However, females who retired had higher scores at baseline in both support measures relative to workers in the analysis by retirement status. These findings provide evidence for the trade-off mechanism of social connectedness motivating retirement discussed in Chapter 3 (Sections 3.3.1 and 3.3.2). The fact that workers who retired had higher levels of support than workers before they retired and the lack of effect of retirement on social support, suggest that higher levels of support could have motivated retirement. Likewise, female workers who retired had higher satisfaction with the relationship with children than workers, but the analysis of the process of retirement did not show a significant effect of retirement on satisfaction with the relationship with children. These findings provide further support for the trade-off mechanism in the context of females’ retirement process.

Most of the patterns observed in this section can be understood in the context of Continuity Theory, which states that people tend to maintain links to their past experiences in order to preserve internal and external structures to adapt to changes over the life course (Atchley, 1971). Maintaining continuity pre- and post- retirement is likely to help older adults to make a successful transition. This continuity means using

“familiar strategies in familiar arenas of life” (Atchley, 1989, p. 183). For instance, among males, increased involvement with children and social activities with family and friends with retirement may not be an area where they feel that comfortable if they have not been involved in the past. In contrast, voluntary work, as a formal productive activity, may help them maintain the status and role identity that they had when they were employed. The fact that among females these patterns are not observed provides evidence that females’ work, personal and family spheres are much more interconnected than males’. Therefore, as females are used to performing these different roles simultaneously, retirement from the workforce does not have as strong an impact on their activities as it does for males.

Conclusion

The current chapter investigated two research questions: Do differences in social connectedness by retirement status change over time? and how does the process of retirement affect social connectedness? Regarding the first research question, findings indicated that differences in social connectedness change over time in terms of frequency of social activities (measure of network structure) for males and females, and hours of voluntary work (measure of formal social engagement) among males. In contrast, the differences in social support and quality of relationship with children by retirement status found among females are maintained over time in parallel trajectories. Regarding the second research question, results revealed that retirement from paid work has no effect on relationship with partner, relationship with children (females) and social support. In contrast, a ‘honeymoon’ effect was observed for frequency of social activities and, to some extent, for relationship with children, among males. Among females, there is an increase in frequency of social activities at retirement which is maintained in subsequent waves. In addition, while males increase their hours of voluntary work before retirement and continue to increase their participation after retirement, females increase their hours of voluntary work only up until the time of retirement. Taken together, the findings in this chapter indicate that the process of retirement has a larger effect on males’ social connectedness relative to females’. In addition, while no evidence of the trade-off mechanism of social connectedness motivating retirement was found among males, results suggest that higher frequency of social activities, higher levels of social support, and better quality of relationship with children, can motivate females to retire.

The next chapter discusses and integrates the main findings from the three results chapters of this thesis (Chapter 5, Chapter 6 and Chapter 7). The findings are discussed in the context of the literature and the theoretical approaches and conceptual framework presented in Chapter 3. In addition, limitations, implications and conclusions are presented.

8. Social connectedness and the process of retirement

This thesis has investigated the role of social connectedness in the process of retirement by examining multiple aspects of social connectedness (network structure, network quality, social support and formal social engagement) and their interrelation with the retirement process, including planning in the pre-retirement phase, retirement status in the retirement phase, and transition from pre-retirement to retirement. As discussed in the literature review, little extant research covers these multiple dimensions of this topic.

Two data sources were used in this thesis. Cross-sectional analysis of the national survey of the Social Networks and Ageing Project (SNAP) provided detailed information on older adults' social connectedness. Analysis of the Household, Income and Labour Dynamics in Australia (HILDA) provided a longitudinal component.

The models presented in Chapters 5, 6, and 7 generally confirmed the hypothesis of social connectedness having a significant role in the retirement process. First, regarding subjective time to retirement, incorporating social connectedness indicators in the models increased the percentage of variance explained, and this increase was larger among females (Chapter 5). Second, analysis of deviance in Chapter 6 indicated that, for females and those aged 65-69, the inclusion of social connectedness indicators significantly improved the models for retirement status. Third, longitudinal analyses in Chapter 7 showed that there are differences in social connectedness between workers, retirees and those workers who retired during the observation period. In addition, the effect of time varies as a function of retirement status (Section 7.1.2). Lastly, Chapter 7 also showed that there are changes in social connectedness throughout the phases of the retirement process, particularly in network structure and formal social engagement (Section 7.2.2).

Results from the analyses presented in Chapters 5, 6 and 7 indicate that all of the aspects of social connectedness examined (network structure, network quality, social support and formal social engagement) are significantly associated with at least one element of the process of retirement: planning, status or transition from work to retirement. Further, these associations are different for males and females. These results

show that network structure and formal social engagement play the most significant roles in the retirement process.

This study was situated in the context of the life course perspective. It was argued in Chapter 3 that the concepts of historical time, timing of lives, linked lives and human agency are all relevant for the study of retirement transitions, and could help understand the relationship between social connectedness and the process of retirement. In this study, historical time refers to the meaning of retirement in the present day: today in Australia it is expected that most people will retire from paid work at some point in old age and will receive a retirement income. Because of population ageing and increased longevity, more people will spend longer in retirement. This makes the further study of retirement transitions an important priority. As discussed in Chapter 3, the timing of lives is also a relevant concept, since there is an expectation that retirement from paid work will occur at or close to age 65, which is Age Pension eligibility age for the sample in this study (although it often occurs earlier, see Chapter 2). This study found that this timing is relevant for understanding social connectedness and retirement, since the largest number of significant associations between social connectedness and retirement status occurred among those aged 65-69. It is at this age, when retirement is a reality, that differences in social connectedness discriminate between those retired and those not retired.

The importance of the concept of linked lives was established through the significant associations between social connectedness with family, friends, and formal groups and the different phases of the process of retirement. As hypothesised, social connectedness was found to influence retirement planning and showed significant associations with retirement status in both cross-sectional and longitudinal analyses. In addition, social connectedness was significantly influenced by the process of retirement. These results indicated that individuals' social connectedness is linked to their trajectories of work and retirement.

The concept of human agency referred to the capacity of individuals to make choices about their present and future. Although many older adults are subject to involuntary retirement, this study focused on individual propensity to retire, particularly on personal social connectedness built over time. This study showed that for older adults who have built meaningful relationships and are socially engaged, these aspects influence their retirement transition.

It was also suggested in Chapter 3 that sex is a defining aspect of the life course. Social connectedness and retirement transitions differ by sex. As expected, the influence of social connectedness in the retirement process and changes in social connectedness throughout the phases of retirement were different for males and females. These results confirm previous findings showing that the transition to retirement is a gendered experience (e.g., Kim & Moen, 2002; Moen, 2001).

In the context of the life course perspective, the conceptual framework for this study proposed that ‘past history’, ‘current circumstances’ and ‘expectations’ would influence both retirement planning in the pre-retirement phase and retirement status in the retirement phase. The study results showed that, consistent with previous literature, elements of ‘past history’ and ‘current circumstances’ are important factors in influencing retirement planning and retirement status. ‘Expectations’ also showed a significant role; consistent with previous research, reasons to retire were significantly associated with retirement planning and subjective life expectancy was significantly associated with both retirement planning and retirement status.

The conceptual framework suggested that, because of the trade-off between work and social connectedness in the context of a limited future time perspective at older ages, social connectedness would influence retirement planning and retirement status, over and above the effects of ‘past history’, ‘current circumstances’ and ‘expectations’. It was hypothesised that, through this mechanism, higher levels of connectedness would be associated with earlier retirement planning and those with higher levels of connectedness would be more likely to be retired. These hypotheses were partially supported, depending on sex and the specific social connectedness indicator. For example, only formal social engagement influenced retirement planning for males, while network structure and network quality influenced retirement planning for females. Similarly, social connectedness indicators were only marginally associated with retirement status among males in the cross-sectional analysis, while a number of reliable associations emerged among females.

Based on the phases of the process of retirement proposed by Atchley and Barusch (2004) and the concept of social convoys (Antonucci & Akiyama, 1987b), a bi-directional relationship between social connectedness and the process of retirement was expected. The conceptual framework indicated that social convoys could change during the transition to retirement and social connectedness could be influenced by the different phases in the retirement process. These hypotheses were partially supported.

Network structure and formal social engagement increased with the transition from work to retirement among males and females. On the other hand, social support was stable for males and females.

Because of the importance of sex in defining the life course, particularly in terms of the more intermittent labour force participation of females (e.g., Han & Moen, 1999; Jefferson, 2005, 2009) as well as females' higher levels of social connectedness (e.g., Antonucci & Akiyama, 1987a; Windsor et al., 2016), it was proposed that the role of social connectedness in the process of retirement would be more prominent among females than males. As previously discussed, results were different for males and females, and a greater number of significant associations were found among females. However, exiting the labour force had a greater impact on males' social connectedness than on females'. Taken together, the results suggest that the interrelationship between social connectedness and the process of retirement is highly complex.

The next section of this chapter (Section 8.1) highlights the contribution of this thesis to current knowledge in the area through a discussion of the main findings in the context of the existing literature and the theoretical approaches and conceptual framework employed in this thesis. This chapter then addresses a number of limitations of this study as well as suggestions for future research (Section 8.2). Finally, the implications of this study for policy are presented in Section 8.3, and the conclusions in Section 8.4.

8.1. Discussion of main findings

The review of the literature showed that, although the process of retirement has been widely studied, little existing research has focused on the role of social connectedness beyond marital relationships, or has incorporated different phases in the retirement process while covering multiple aspects of social connectedness. This section integrates the findings of the different chapters with the current literature, and details the contributions of this study to the body of knowledge on the role of social connectedness in the process of retirement. The findings are discussed in the context of the conceptual framework previously described.

Results for retirement planning showed that males who participate in voluntary work (measure of formal social engagement) and females with good quality relationships with neighbours and friends and who have a large family network structure, plan to retire sooner. In the context of higher levels of connectedness being associated with a shorter subjective time to retirement, it might have been expected that retirees would report

higher connectedness than non-retirees. However, the significant associations found regarding subjective time to retirement did not match those found in the analysis of retirement status. In this context, it is important to consider that, although current social connectedness may influence retirement planning and behaviour, in keeping with notions of social convoys (Antonucci et al., 2001), social connectedness can also change once retirement occurs.

For instance, among males, those with a larger family or friend network structure were more likely to be retired, even though network structure was not significant for males' subjective time to retirement. This finding suggests that, once older adults have retired, differences that may have not been present in the pre-retirement phase can emerge. For males, network structure does not affect the decision about retirement but retirement could affect their network structure. Although a large network structure could act as a 'pull' factor motivating males to move into retirement, the longitudinal analysis provides evidence of an increase in network structure after retirement. Previous research has shown increased contact with friends and time spent with friends after retirement among males (George et al., 1984; Palmore et al., 1984).

Similar to the results about network structure, males' relationship quality did not influence retirement planning but male retirees were likely to report better quality of relationship with family than workers in the cross-sectional analysis. Consistent with the findings of the current study, van Tilburg (1992) also found that retirees reported more positive relationships after retirement. In the case of family relationships, this result could reflect a decrease in the effect of work-related stress and work-to-family conflict on the quality of relationships following retirement, as well as a higher preference for retirement among those with better quality of relationships. It is important to note that these effects were small and barely reached significance (associations $0.05 < p < 0.06$) and need further exploration.

Among females, family network structure was a significant predictor of subjective time to retirement. Consistently, a large family network structure was associated with higher likelihood of being retired. In the case of females, it is possible that the higher interaction with the family network reflected in a large network structure had acted as a 'pull' factor to move into retirement. In terms of the friend network, quality of relationships with friends predicted shorter time to retirement, and a large friend network structure and greater support received from friends were associated with higher likelihood of being retired. These results suggest that the availability of good quality

friendships may influence the decision to retire, and once retirement occurs, contact with friends increases, as previously documented in the literature (e.g., George et al., 1984).

Consistent with the concept of the social convoy (Antonucci & Akiyama, 1987b), no negative effects of retirement were observed on availability of support and quality of support in the longitudinal analysis (Chapter 7). Results suggest that the convoy of social relations provides consistent levels of support throughout the retirement process, even when changes in the network composition could have been experienced, for example, because of losing contact with co-workers (van Tilburg, 2003). Previous research has also found no negative effects of retirement on social support (Bossé et al., 1993).

Results for males provided little evidence to support the trade-off mechanism between work and social connectedness proposed in Chapter 3. Instead, associations between social connectedness and the process of retirement among males show that the role of social connectedness is better understood as changes in certain aspects of social connectedness during the phases of the retirement process. In particular, results showed that formal social engagement and network structure varied throughout the process of retirement.

In terms of formal social engagement, males' voluntary work participation was associated with shorter time to retirement, providing some cross-sectional evidence to support the presence of the trade-off mechanism. However, the findings of the longitudinal analysis did not provide further support. The analysis of hours of voluntary work over time by retirement status (Section 7.1) showed that workers and workers who retired did not differ in their hours of voluntary work at baseline, and workers who retired showed a significant increase in hours of voluntary work during the observation period. This finding provides clear evidence of an effect of retirement on hours of voluntary work, as opposed to any 'pull' effect of voluntary work. The analysis of hours of voluntary work before and after retirement (Section 7.2) showed that males increased their hours of voluntary work one wave before retirement was reported and continued to increase their hours gradually after retirement. This pre-retirement increase in voluntary work participation could indicate retirement preparation. However, it could also be that unsatisfactory jobs lead older workers to find other productive roles. This is a topic for further investigation.

Taken together, the findings for males' formal social engagement suggest some degree of productive role replacement. The results highlight the important role that productive activities play in the male life course, which extends to their retirement transitions. These findings are consistent with previous research showing that retirees do more hours of voluntary work than workers (Caro & Bass, 1997; Moen & Flood, 2013; Musick & Wilson, 2008) and that retirement is associated with increased participation in voluntary work (Moen et al., 2000; Mutchler et al., 2003; van den Bogaard, Henkens & Kalmijn, 2014). Previous findings showing that voluntary work has positive effects on well-being among retirees but not among workers (Moen & Fields, 2002; Potocnik & Sonnentag, 2013), and evidence of a stronger positive effect of voluntary work on well-being after retirement (Moen et al., 2000), support the hypothesis that voluntary work replaces paid work at least to some extent. It is possible that voluntary work replaces the immaterial benefits of paid work (Sherman & Shavit, 2012) and, therefore, has positive effects on well-being.

Formal social engagement and network structure show different patterns of association with the process of retirement among males in the longitudinal analysis. The fact that the increase in hours of voluntary work was sustained over time, unlike the increase in network structure, suggests that this productive role is more relevant than network structure for the preservation of males' role identity post-retirement, and potentially for their well-being. While it is apparent that voluntary work participation to some extent replaces participation in paid work among males, which is likely to be part of their retirement routine, only a 'honeymoon' effect (Atchley & Barusch, 2004) is found in relation to males' network structure. Beehr (1986) states that people have an expectation of all the things they will do in retirement and could not do during their working years. Similarly, Freund et al. (2009) discusses the fragmentation of the life course into two stages: one of family and work commitments, and an after-retirement stage focused on leisure and social relations. The temporary increase in network structure after retirement, which returns to pre-retirement levels after a two-wave 'honeymoon', could indicate that older males, once retired, tried to do things that they did not have time to do during their busy working years. Ekerdt and colleagues (1985) found in their study of recent and mid-term retirees' well-being that recently retired males (retired for 0 to 6 months) showed higher optimism and future orientation than males who had been retired for 13-18 months. Their study identified a stage of enthusiasm immediately after retirement, which was followed by a period of temporary dysphoria (Ekerdt, Bossé & Levcoff, 1985). The pattern observed for males' network structure could be part of the

stage described by Ekerdt and colleagues, although in the present study the exact date of retirement is unknown. These results do not provide evidence of a trade-off mechanism operating in the association between social connectedness and males' process of retirement.

In line with the concept of gendered life course (Moen, 2001), the conclusions for females are different from those for males. Among females, network structure is a 'pull' factor for retirement. Network structure was significant for retirement planning, and female retirees showed larger network structures than workers. The longitudinal analysis confirmed that, although there were further increases in network structure after retirement, workers who retired already had a larger network structure than workers at baseline. This evidence supports the trade-off mechanism. These results are consistent with findings from previous longitudinal research showing that frequency of social activities with family and friends is associated with earlier retirement (Lancee & Radl, 2012).

Results for social support among females also provide evidence for the trade-off mechanism. Although social support was not significant in predicting retirement planning among females, female retirees had higher support from friends in the cross-sectional analysis. The longitudinal analysis showed that, before they retired, female workers who retired had higher quality and availability of support than workers. Consistent with Elovainio and colleagues' study of early retirement (2003), these findings suggest that females with lower social support are less likely to retire. There was no change in social support during the phases of the process of retirement (Section 7.2), providing further evidence to support the trade-off mechanism, as opposed to an effect of retirement on social support.

Formal social engagement was also associated with retirement among females. Those who participate in voluntary work were more likely to be retired and female retirees did more hours of voluntary work than female workers. However, there were no differences in hours of voluntary work between workers and workers who retired. The pre-post analysis of the retirement process showed an increase in hours of voluntary work at the time of retirement. These results suggest that the higher levels of participation among retirees compared with workers are the result of moving from work to retirement, consistent with previous research (e.g., Moen et al., 2000; Mutchler et al., 2003).

Taken together, results for males and females provide evidence of the aforementioned bi-directional association between social connectedness and the process of retirement. On the one hand, social connectedness influences retirement planning and retirement status. On the other hand, retirement from the workforce has a significant impact on social connectedness, particularly on network structure (males) and voluntary work (males and females).

The more prominent role of social connectedness in motivating females' retirement reflects the greater interrelation between family and work and the more interrupted career that females experience (Jefferson, 2005, 2009; Loh & Kendig, 2013; Moen, 1996). Family relationships showed a significant role in females' retirement planning and retirement status, and family-related reasons to retire were significant predictors of retirement planning. These patterns are also consistent with traditional gender roles. Because of traditional gender role socialisation, males' identity is likely to be strongly defined by their working lives and work-related roles. Females' identity and life course transitions, especially in relation to labour force participation, are more likely to be influenced by family-related roles, in particular because females are more likely to have interrupted careers due to child-rearing and other family responsibilities (e.g., ABS, 2013b; Han & Moen, 1999; Jefferson, 2005, 2009; Moen, 1996). The results show that the concept of gendered life course (Moen, 2001) provides a relevant framework in which to situate the role of social connectedness in the process of retirement.

In line with the concept of 'timing of lives' proposed by the life course approach, it was hypothesised that the association between social connectedness and the likelihood of being retired would be stronger among those older adults who were close to the conventional retirement age of 65. As expected, most associations between social connectedness and retirement status were found in the 65-69 age group. This age group most directly faces the question of retirement in terms of both the conventional retirement age and the fact that retirement is a real possibility due to eligibility for the Age Pension and private pension. It is possible that the importance of social connectedness in the decision to retire increases once older adults have access to retirement income and some level of financial security for their future. For those aged 50-59 and 60-64, the likelihood of being retired was mainly associated with socio-demographic characteristics, such as education and satisfaction with standard of living. These results suggest that, at younger ages, the financial feasibility of retirement is a key factor in the decision, which overrides any potential role of social connectedness. In

the same vein, previous longitudinal research has found that the effect of social activities with family and friends on retirement timing is significant only after age 60 (Lancee & Radl, 2012).

The stronger association between social connectedness and retirement status among those aged 65-69 could also be related to the characteristics of the social networks at different ages. For example, among women, research has shown that the birth of a grandchild increases the probability of retirement (Lumsdaine & Vermeer, 2015). Due to past fertility patterns in Australia people in this age group (65-69) are likely to have more children and, therefore, more grandchildren than those in younger age groups (ABS, 2014). In contrast, at age 70 and over, the trade-off between work and social connectedness is likely to be less relevant, particularly because those still working are less likely to be working full-time (McDonald, 2011; Moen & Flood, 2013).

Results showed that network structure and formal social engagement are more strongly associated with the process of retirement than network quality and social support. This is particularly evident in the longitudinal analyses. While satisfaction with relationships and support tend to be more stable throughout the transition, network structure and formal social engagement show the largest changes. In other words, actual activities change with retirement, while how people feel about their relationships tends to be more stable. These findings are consistent with the description of social convoys given by Antonucci and Akiyama: “Convoys are thought to be dynamic and lifelong in nature, that is, changing in some ways but remaining stable in others, across time and situations” (1987b, p. 519).

Network structure and voluntary work provide opportunities to “define and reinforce meaningful social roles [...] which in turn, provides a sense of value, belonging, and attachment” (Berkman et al., 2000, p. 849). This may partly explain why the associations of network structure and voluntary work with retirement are strong. In addition, when an activity that was a major focus in younger adulthood (such as labour force participation) is withdrawn, new goals or new means of achieving the same goals (such as meaningful productive participation) may emerge. The results demonstrate dynamism in older adults’ engagement and its association with retirement.

It is likely that further research focused on social networks and well-being would provide further insights into these results. Existing research has shown that structural aspects of social networks have a more consistent effect on well-being than functional

aspects such as social support (e.g., Cohen & Wills, 1985; Litwin, 2011). It is the structural aspects of the network, such as network size, composition and frequency of contact, that provide the opportunity for social engagement. Social engagement, in turn, allows individuals to enact meaningful social roles (Berkman et al., 2000), giving meaning to life and having a positive effect on well-being. As explained by Berkman and colleagues, “Those roles that provide each individual with a coherent and consistent sense of identity are only possible because of the network context which provides the theatre in which role performance takes place” (Berkman et al., 2000, p. 849).

In the context of the retirement process, when older adults exit from their productive role in the paid labour force, enacting other meaningful roles may be important for a positive transition. On the one hand, a larger network structure acts as a ‘pull’ factor motivating retirement by providing opportunities for social engagement; this is the case for females. On the other hand, formal social engagement allows individuals to continue participating in productive activities. Both aspects of social connectedness provide the opportunity to keep active and engaged during the process of retirement.

The longitudinal analysis presented in this thesis underlines the importance of taking a life course approach when studying both the process of retirement and trajectories of social connectedness. The use of longitudinal data overcomes the limitations of the cross-sectional analysis (comparing workers and retirees) which does not allow a distinction to be made between differences that existed prior to retirement and those that may have arisen as a result of retirement. In addition, the analysis of life course trajectories is important for understanding the retirement process. Findings from this study showed that variations in social connectedness over the different phases of the process of retirement need to be taken into account for correct interpretation. Studies that measure change between two time points are not able to identify the dynamism of social connectedness over the retirement process and could lead to biased results. For example, in the analysis of network structure in this study, depending on which time points were selected, the conclusion could have been that retirement has no effect on network structure or that retirement is associated with an increase in network structure. In fact, this study has shown that each conclusion is incomplete. The analysis of several time points showed that there is a temporary increase in network structure after retirement, but that network structure returns to pre-retirement levels. The results also highlight the need for observation periods which are long enough to cover the different phases of the process of retirement.

In sum, this thesis has identified and described the role of social connectedness in the process of retirement for males and females. On the one hand, this study found support for a trade-off mechanism among females in terms of network structure and social support. On the other hand, this study showed that productive role replacement is the most dominant aspect of social connectedness for males' retirement. This thesis also showed the relevance of the gendered life course in the study of retirement and social connectedness.

The next section presents the limitations of the current study and discusses opportunities for future research that would increase our understanding of social connectedness in the context of the process of retirement.

8.2.Limitations and future research

A number of limitations of this study need to be considered when interpreting the findings. The first limitation is that the conclusions of this study are based on the respondent, taking no account of the characteristics of the respondent's partner, which could be important in the association between retirement and social connectedness. Studies of marital dyads have shown that partners influence each other's retirement planning and decisions (e.g., Butterworth & Rodgers, 2007; Henkens, 1999; Henkens & van Solinge, 2002). In addition, couples' retirement decisions are related to the value of joint leisure (Coile, 2004; Gustman & Steinmeier, 2004). Previous research has already established the role of marital quality on the process of retirement: people with good marital quality are more likely to retire (e.g., Kubicek et al., 2010). Furthermore, research has found interdependence between husbands' and wives' caring roles, paid employment and social connectedness (Glaser, Evandrou, & Tomassini, 2006). For these reasons, taking into account partners' social connectedness and how husbands' and wives' social connectedness interact, as well as the interrelation of their retirement intentions and behaviours, will enable better understanding of the association of social connectedness with the process of retirement. The use of actor-partner interdependence models (e.g., Cook & Kenny, 2005) could provide important insights on the interrelation of partners' social connectedness and retirement decisions.

A second limitation is the lack of distinction between work-related and non-work-related friendships. The influence of social connectedness in the process of retirement, as well as the effect of the retirement transition on individual's social connectedness, are likely to differ according to the extent to which individual's main source of social

integration is through work. Future research could investigate the roles of work-related and non-work-related networks in the retirement process, differentiating between males and females and between those who have had long-term career jobs and those who have experienced greater job mobility or interruptions to labour force participation over their life course. In addition, knowing the proportion of the friend network that are work- and non-work-related would be helpful to understand and compare the findings in relation to retirement planning and retirement status, for instance, and to identify retirement-related changes in network structure and composition. For example, previous research has shown a decrease in the proportion of males' work-related friendships at older ages, particularly among retirees (van Tilburg, 2003).

Furthermore, HILDA does not distinguish between types of networks – such as family, friends and neighbours – regarding network structure and social support. Given that there are known differences in older adults' network structure of family and friends (e.g., Shaw et al., 2007; van Tilburg, 1998), and the social support received from family and friends in later life (e.g., Antonucci & Akiyama, 1987a, 1987b), the relationship between these different types of networks and the process of retirement could also differ. Longitudinal analysis investigating separately family and friend networks would shed light on possible family-friend differences in the association between social connectedness and retirement. This is an important distinction, particularly in the context of the different implications of engagement with family and friends for older adults' well-being (e.g., Huxhold et al., 2013).

A further limitation is having different measures of social connectedness in the two studies, which limits the comparability and complementarity of the findings. However the consistency across studies lends support to the findings. This thesis has shown that the main associations between social connectedness and the process of retirement are in terms of network structure, support networks and formal social engagement. Future research should endeavour to incorporate in longitudinal studies measures of network structure and support networks (separately for family and friend networks) as well as level of participation in formal social engagement. In other words, both detailed measures of social connectedness and comprehensive coverage of relevant aspects of the retirement process are required in the same longitudinal study.

The difficulty in defining retirement is an important limitation, not only of this study, but also for any research in this area. Retirement is not an event, but a process (Ekerdt et al., 1985). Even though different phases of the process were taken into account in this

thesis, that is pre-retirement, change from pre-retirement to retirement, and life in retirement, how 'being retired' is defined influences the results. Retirement is a process that can take different work-to-retirement trajectories. A number of different trajectories have been excluded from this study because of the way retirement was defined. Retirement can mean leaving a career job, receiving a pension, working part-time or leaving the labour force completely. As noted by Ekerdt (2010), many of these criteria overlap each other, making the definition ambiguous. For this study, a pragmatic definition had to be adopted in order to more clearly observe the association between social connectedness and retirement. This definition was adopted so that a radical change in the lives of older people could be assumed. While this definition was appropriate in the context of this study, it is important to bear in mind the variation in work-to-retirement trajectories, as well as self-definitions of retirement, in order to capture the complexity involved in the process of retirement and the role that social connectedness plays in this process. The role of social connectedness may be different if retirement is defined as leaving a career job or receiving pension or self-defined independently of work status. Longitudinal data providing detailed social connectedness measures as well as sufficient numbers of males and females transitioning from work to retirement would provide an opportunity to investigate the role of social connectedness in the context of different retirement definitions and work-to-retirement trajectories. Furthermore, older people can 'unretire' or retire multiple times. For example, research based on the Health and Retirement Study in the United States found that 47% of respondents who have been fully or partially retired returned to work in retirement (Pleau, 2010). However, this pattern is still uncommon in Australia (Warren, 2015). As noted by Shultz and Wang (2011) "The landscape of retirement is in flux and riddled with uncertainty" (p. 171). It is possible that social connectedness plays a more prominent role in retirement transitions of those who do not plan to work in retirement or in the 'last retirement' of those who have returned to work after retirement, relative to those who plan to do more paid work in retirement. Again, the way retirement is defined would be a key aspect of the analysis.

A further limitation is that the analysis of retirement planning only included those who, on the one hand were planning to retire, and on the other hand had a specific age at which they expected to retire. This analysis therefore excludes those who plan to never retire and those who do not have clear retirement plans yet. Ekerdt, DeViney and Kosloky (1996a) defined five types of retirement plans: retire completely, retire partially, change jobs, never retire and uncertainty about retirement. In a further study,

these authors found that females were more likely to have no plans than males, and that while the plan of retiring completely was stable over time, the more complex retirement options varied significantly (Ekerdt, DeViney, & Kosloky, 1996b). In the present study, the question about expected retirement age did not provide the option to state alternative retirement plans. The fact that there were no alternative answers provided in the questionnaire, such as ‘don’t know’ or ‘never’, may have forced some respondents to provide an expected age for complete retirement even though they may have been unsure of their plans or may have been planning a partial retirement. Moreover, the role of social connectedness is likely to be different for older workers classified in different categories (as per Ekerdt and colleagues’ categorisation), since the implications of their retirement plans will be different. For example, those who plan never to retire may need a strong support network that can provide help with health issues or caring responsibilities in order to stay at work. Similarly, a large and diverse network is likely to provide more job opportunities, which could help older adults to achieve their plans of changing jobs or become self-employed. On the other hand, planning a complete retirement may urge older adults to consider what they will do once they leave paid work and look for opportunities for productive engagement. Further research should consider the multiplicity of retirement plans in the study of retirement and social connectedness.

Finally, the non-representativeness of the sample limits the generalisation of findings. Though the SNAP sample was randomly selected from the membership of National Seniors Australia, members are known to be more educated than the general older Australian population. In terms of the age distribution, National Seniors Australia membership, as well as the SNAP sample, over-represents those aged 65-69 and underrepresents those aged 50-54 and those aged 80 years and over, relative to the Australian population. The analysis of SNAP data controlled for education and age (as well as sex); therefore, this source of bias should have little effect on the results.

Another possible source of bias is National Seniors Australia membership. First, results could be biased if members of such an organisation were more socially engaged than the general population. However, the fact that the majority of members join the organisation “to be informed about over 50s issues” and not because of any opportunities for social participation or similar reasons (T. Adair, personal communication, August 25, 2014), suggests that they may not significantly differ from the general population in their social connectivity. National Seniors Australia members receive a magazine and benefits in

terms of travel cards and insurance. Social engagement among members is not a feature of the services offered. A second source of bias could occur if National Seniors Australia members were more likely to be retired than the general population. Nonetheless, no difference was found in the proportion of those completely retired in each sample (HILDA and SNAP).

In terms of HILDA, although the study is representative of the Australian population, the way the sample was selected for the analysis (depending on their working and retirement information) may have resulted in the underrepresentation of people with alternative work-retirement trajectories. Further research would be needed to assess the extent of any bias arising from this possibility.

A number of other aspects could be addressed in future research. More detailed information about older adults' occupations and the demands and restrictions that their employment places on their families and personal life could also provide insight on the association between retirement and social connectedness. Research has shown that work-to-family conflict influences retirement preferences. A study of men and women aged 52-54 found that higher levels of work-to-family conflict was associated with higher preference for being retired in the next ten years (items included "My job reduces the amount of time I can spend with the family", "Problems at work make me irritable at home", and "My job takes so much energy I don't feel up to doing things that need attention at home"; Raymo & Sweeney, 2006).

Furthermore, some occupations may be more restrictive, making work and leisure mutually exclusive to a higher extent. Research from the United States showed that greater time distortions to non-work activities, including leisure (measured in terms of the effect of the occupation on the probability of engaging in non-work activities), was associated with a higher probability of leaving the job for a new job or retirement (Friedberg, Sun, & Webb, 2008). In addition, some occupations may provide little opportunity to develop social connections at work, for example, occupations with high employee turnover. Research in Australia indicates that retirement intentions differ by occupation. For example, people in 'blue collar' occupations expect to retire later than those in 'white collar' occupations (Jackson & Walter, 2010). It would be worthwhile to investigate in more detail the effects of time restrictions due to occupational demands on social relations, retirement preferences and retirement transitions.

Research has shown that the voluntariness of retirement has important consequences for adjustment to and well-being in retirement (De Vaus et al., 2007; Quine, Wells, De Vaus, & Kendig, 2007). For this reason, it is important that future research takes into account the degree of voluntariness of retirement when investigating retirement and social connectedness. In this thesis, it was assumed that older workers had control over their decision. However, this is not always the case. Planned and voluntary retirement give older adults the chance to find alternative opportunities for engagement, in order to maintain continuity and promote well-being in retirement. Moreover, the consequences of involuntary retirement may be more severe for those who are socially isolated.

Another possible influence on social connectedness and retirement is individual characteristics, such as personality. The Big Five is one of the most popular classifications of personality traits (McAdams & Olson, 2010). According to this model, there are five main factors: extraversion, neuroticism, openness to experience, agreeableness, and conscientiousness (McCrae & Costa, 2008). For example, people who score high in the extraversion items relating to companionship and social stimulation are more likely to arrange their lives in ways that promote opportunities for social engagement. In contrast, people who score high in neuroticism may be less able to build positive relationships (McCrae & Costa, 2008). Different personality traits influence social behaviour in different ways. As a result, the role of social connectedness in the retirement process may differ as a function of personality. Personality was not within the scope of this study – and data on personality were not available in the SNAP dataset – but it is important to acknowledge that personality is an additional source of variability in social connectedness, and may explain some of the associations – or lack of associations – observed in this study. It would be important for future research to control for personality as a source of variability, and it would also be informative to identify the association between social connectedness and the process of retirement among people with different personality structures.

Overall, HILDA and SNAP, in combination, provide a good starting point for the study of retirement and social connectedness. The various above-mentioned needs for further research on retirement transitions underline the case for a nationally-representative population-based longitudinal study of ageing in Australia.

8.3. Implications

Given that the benefits of being socially connected have been consistently demonstrated in the literature, the finding that older workers' social connectedness and the process of retirement influence each other has important policy implications. First, policy measures are required to encourage social connectedness during the process of retirement. Second, policy should address the changing priorities of older workers when considering the extension of working lives. These two policy areas are discussed below.

Encouraging opportunities for social connectedness

Results showed that females with a smaller network structure plan a later retirement and are less likely to retire. This finding may be due to such females choosing to stay at work for longer in order to maintain social belonging. However, they will eventually stop working, either because of ill health, job loss or other reasons, and will then be at increased risk of social isolation relative to those who had built social connections before retirement, particularly if living alone. Thus, it is important for older females' social integration, and consequently their well-being, that they develop strong social connections before they retire, particularly as the high life expectancy of females means that they will spend many years in retirement, even if they retire late – the life expectancy for females aged 65 in Australia in 2011-2013 was 22.1 years (Australian Institute of Health and Welfare, 2015). Employers and communities could promote the development of social networks by providing older females with opportunities for engagement outside work. For example, employers could facilitate programs for voluntary work among their employees, or other organised group activities, which provide opportunities for social engagement as well as potentially extending participants' social networks. Similarly, local communities could promote interest groups for females approaching retirement. In addition, better social bonds at work could be promoted by employers, for example through teams in sports or other group activities.

As productive role replacement is important for older males' transition to retirement, voluntary work opportunities should be encouraged before individuals leave paid work. Results showed that males increase their participation just before retiring, and continue to gradually increase their participation once they stop working. Older adults may have fewer chances to engage in voluntary work once they are no longer part of organisations that provide opportunities for volunteering, such as the workplace. Moreover, research

from the United States shows that older adults volunteer at a much higher rate when they are asked to participate (Independent Sector, 2000). Therefore, a formal mechanism linking older people with organisations is an important part of facilitating voluntary work participation. This link will be more easily implemented while older adults are still at work, as programs can be targeted to the specific population of interest. In addition, older adults have valuable skills and experience that can be very useful for voluntary work organisations. Increasing older adults' involvement in voluntary work not only benefits older adults themselves by having a positive effect on health and well-being (e.g., Musick, Herzog & House, 1999; Van Willigen, 2000), but also benefits organisations in need of skilled and experienced volunteers.

Government programs directed to increase voluntary work participation should also provide opportunities for productive engagement for those with poorer health or disability, and those from different socio-economic backgrounds. Research has shown that older adults with more resources in terms of human capital are more likely to volunteer. For example, studies consistently show that people with higher levels of education are more likely to volunteer (Caro & Bass, 1997; Choi, 2003; Mutchler et al., 2003; Tang, 2006), as well as those with higher socio-economic status (Warburton, Le Brocque & Rosenman, 1998) and higher income (Choi, 2003; Tang, 2006). In particular, those who retire because of ill health may have fewer opportunities for social engagement, since poor physical health is a barrier for voluntary work participation (Choi, 2003). Mensheds Australia is an example of such initiative. This not-for-profit organisation links men's sheds with relevant health and community organisations and supports them in the operation of health promotion programs, providing a link between men and formal health providers (Mensheds Australia, n.d.). Providing appropriate space for social contact, and linking social participation to health programs, has the potential to increase male's social connectedness in retirement as well as having a positive impact on their health. Similar groups could be developed for males and females in different areas of interest, and research on their impact should also be implemented.

Extending working lives

Most countries in the developed world are experiencing population aging. Previous policies that were focused on promoting early retirement have shifted towards retaining and increasing participation of older workers, mainly through financial incentives to delay retirement and increases in pension eligibility age (Henkens & van Dalen, 2002;

Jackson et al., 2006; Taylor et al., 2000). For example, in Australia, the Government has gradually increased Age Pension eligibility age from 65 to 67 (effective July 2023) – with a planned further increase to age 70 by July 2035 – in order to promote economic growth and counteract the increasing cost of the Age Pension and health care (Commonwealth of Australia, 2015). These policies are focused on the fiscal pressures generated by population ageing. That is, these policies are based on the government's point of view, with little regard for the expectations and intentions of the older population. In addition, policies are still focused mainly on financial incentives to encourage longer working lives, even though previous research – as well as the present study – has shown that retirement is significantly influenced by non-financial factors (e.g., Henkens & van Dalen, 2002).

In order for governments to be successful in increasing labour force participation and delay retirement among older adults who can choose to retire, the psychological needs and motivations of older people themselves need to be taken into account. After decades of work and busy times with work and family commitments (Freund et al., 2009), many older adults want to retire and 'do other things'. In the current study, females who considered that doing other things and spending time with family would be important for the decision to retire planned to retire sooner than those who did not. Similarly, males who participated in voluntary work planned to retire sooner than those who did not participate. A study of American older adults showed that 70% of retirees stated that they wanted to do other things as a reason to retire (Moen et al., 2000). In Australia, leisure time with family and friends was considered one of the barriers to mature age employment by the Consultative Forum on Mature Age Participation in 2011 (National Seniors Productive Ageing Centre, 2011). The national survey Barriers to Employment for Mature Age Australians found that a 'leisure time trade-off barrier' affected the labour force participation of 46.7% of respondents (Adair & Temple, 2012).

While it is important to provide job opportunities for older adults, it is also important to consider that, at older ages, motivations and priorities may change. The flexibility to achieve these goals should be encouraged among employers and the community. Findings from this study showed that higher levels of connectedness with family and friends are a 'pull' factor for females' retirement. Findings also showed that voluntary work participation is an important aspect of males' retirement. In addition, retirees showed higher levels of connectedness than workers, which means that extending working lives may potentially decrease opportunities to enjoy the benefits of good

social connectedness for health and well-being. Taking these findings into account, policies regarding increasing labour force participation among older adults and delaying retirement should address at least three areas: provide meaningful roles, allow for flexible work arrangements, and provide good employment conditions, including addressing age discrimination.

First, job opportunities for older people should provide roles which are better aligned with the changing priorities and motivations of older adulthood. Jobs that incorporate opportunities for mentoring others in the workplace align with the focus on meaningful activities and generativity which become more salient with a more limited future time perspective at older ages (Lang & Carstensen, 2002). For example, a nationally representative survey of Australian workers aged 40-59 found that 36% of respondents reported that the policy option “More jobs that make use of skills and experiences of older workers in mentoring or training roles” would be very likely to persuade them to defer their retirement¹¹ (Walter, Jackson, & Felmingham, 2008). In addition, mentoring roles would also be beneficial for employers as these would allow them to keep older workers’ experience within the organisation. Research by Ekerdt and DeViney (1993) has shown that as retirement gets closer, older workers tend to have more negative attitudes towards work. The authors interpreted this finding in relation to the anticipation of the role change (from worker to retiree), but it could also be related to changes in priorities and motivation. That is, with a more limited future time perspective, older adults’ focus may change from future-oriented goals such as their job and career to emotionally meaningful goals, in the context of an impending retirement. If work opportunities for older adults were more appropriate for their stage in the life course it may be possible to reconcile to some extent the trade-off between work and relationships, while promoting financial and psychological well-being in the older population and economic growth.

At the same time as providing roles which align with the motivations and priorities of older adults, valuing the contributions that older workers make to their employment organisations is also important for extending working lives. There is evidence to suggest that older workers are less likely to intend to retire early if they can apply their specific skills and experiences at work (Oakman & Wells, 2013). In addition, research has shown that older workers (aged 65-76) are more likely to select “work was not

¹¹ “Respondents who spontaneously answered they didn’t ever plan to retire or were planning to work past 65 anyway were excluded from this analysis” (Walter, Jackson, & Felmingham, 2008, p.305). A further 46% rated this item as ‘likely’.

appreciated” as a reason to retire, compared with younger workers (54-64) (Moen et al., 2000). Meaningful roles such as mentoring, and roles where older workers’ skills and experience are valued, will contribute to making work a more attractive alternative to retirement.

Second, flexible work arrangements have been proposed as a way to extend working lives (Adair & Temple, 2012; National Seniors Productive Ageing Centre, 2011). Having the opportunity to continue working, as well as dedicating time to other meaningful activities that become more important with increasing age, could potentially motivate older adults to continue working. In addition, flexible work arrangements have been identified as a key factor for increasing the labour force participation of those with caring responsibilities and those who are ill or injured (Adair & Temple, 2012). Furthermore, a study showed that “flexibility to do other things” was the main reason for retiring but still engaging in paid work in retirement; this study also found that nearly half of respondents who retired but were working in retirement “wanted to work regularly, but for fewer hours” than full-time (Moen et al., 2000, p. 16).

However, flexibility can be difficult to manage for organisations. Managers’ attitudes can present a barrier for the successful application of flexible working arrangements, and this can lead to stigmatization of a section of the workforce (Earl & Taylor, 2015). One study of older females showed that managers believed that flexibility increased employee retention but that older females were not considered part of the core workforce (Earl & Taylor, 2015). Such attitudes may be a reason for the low uptake of flexible work options found in other studies. For example, one study found that workers older than age pension age were not more likely to take formal flexible work arrangements than younger workers – except for part-time work – even though they were more likely to be employed in organisations that offered formal flexible work arrangements (Cebulla, Butt, & Lyon, 2007). These authors concluded that informal flexibility may be more important than formal organisational policies. The potential benefits of flexible work arrangements for older adults’ continuing labour force participation, but the limited evidence of its successful application, indicate the need for further work in this area.

This study showed that self-employed older workers plan a later retirement: compared with full-time workers, those who are self-employed plan to retire more than two and a half years later. Likewise, previous studies have shown that self-employed older workers stay in the labour force for longer (e.g., Borland & Warren, 2006). Self-

employment is likely to provide more flexibility and self-direction, as well as motivation and involvement. Governments could provide incentives for self-employment at older ages. For example, financial incentives and training opportunities could motivate older adults to participate in self-employment after leaving a career job and delay retirement.

Third, providing good employment conditions is an important consideration. For example, more attention to the amount of work-to-family and work-to-personal-life conflict that older adults experience in their current occupations may provide another avenue for extending working lives. Young and mid-adulthood are usually seen as stages in life that are extremely busy with family and work demands, while retirement is seen as the stage where it is possible to focus on leisure and social relationships (Freund et al., 2009). If older adults' jobs place high-frequency or high-intensity conflict on their families and personal lives, it is possible that negative attitudes towards work would increase as planned or expected retirement comes closer – and in the context of financial capacity to retire. If this level of conflict could be reduced, some older adults may be able to maintain a good balance in terms of work and family and leisure, and consider extending their labour force participation, again with financial and psychological benefits. Similarly, it is unlikely that older workers who can choose not to work would be willing to continue working in high-stress positions. Research has shown that a high level of job pressure is associated with planning an early retirement as well as with early retirement timing (van Solinge & Henkens, 2010). Furthermore, findings from the present study show that respondents who rate “job too stressful” as an important reason for their future retirement actually plan to retire two years earlier than those who do not.

Age discrimination is another aspect of employment conditions that needs to be addressed. Age discrimination is still prevalent in Australia, despite the Age Discrimination Act (2004) and the work done by the Age Discrimination Commissioner within the Australian Human Rights Commission. Besides being a barrier for employment at older ages, many older adults face age discrimination in the workplace (Adair & Temple, 2012; Australian Human Rights Commission, 2015). Many times, this takes the form of unconscious age stereotypes that affect the way in which human resources are managed, having negative effects on older workers' careers. For example, a study of four organisations found that employees and managers believed that older workers were not good at learning new technologies but younger workers were. Based on this belief, managers made decisions regarding positions and training, which

excluded older workers (Brooke & Taylor, 2005). Research in the United Kingdom found that men aged 50 and over were less likely to be offered training in the workplace, relative to younger men (Canduela et al., 2012).

In Australia, there has been an effort to highlight the qualities of older workers such as their experience, reliability and work ethic (Australian Government, n.d.) and they are “frequently seen as being more reliable and hard working than younger workers” (Taylor, Tillsley, Beausoleil, Wilson, & Walker, 2000, p. 1). Despite this, the acknowledged greater experience of older workers is often not taken into account in terms of training or career progression (Brooke & Taylor, 2005). Research in the Netherlands shows that although employers have increased the retention of older workers in the last decade, recruitment of older workers is still a ‘last resort’ (Conen, Henkens, & Schippers, 2011). These findings show that older workers are still not always considered part of the core workforce.

The attitudes of employers, co-workers and managers will need to support older workers if they are to stay at work for longer. Research from the Netherlands has shown that older workers are less likely to intend to retire early if their direct supervisor would support them to work beyond age 60 (Henkens, 1999). Similarly, retirees who had a supervisor who supported their prolonged participation in the labour force were less likely to perceive their retirement as involuntary (van Solinge & Henkens, 2007). This finding is important because involuntary retirement is associated with negative outcomes in retirement (e.g., De Vaus et al., 2007). Another study of retirement planning found that positive social relations (measured by three items: “the people I work with are helpful and friendly”, “in the decisions about promotion, my employer gives younger people preference over older people”, and “my co-workers make older workers feel that they ought to retire before age 65”) were associated with higher intention to retire later (Kosloski, Ekerdt, & DeViney, 2001). Moreover, recent longitudinal research found that lack of support from managers to stay at work for longer was associated with early retirement (van Solinge & Henkens, 2014). These findings highlight the importance of having positive relationships at work and the need for cultural change in organisations towards valuing all workers, regardless of age.

In sum, in order to extend working lives in a way that benefits older adults and takes into account their stage in the life course, the three aspects discussed here need to be considered. First, meaningful roles are needed – which align with older adults’ motivations – as well as roles that value the skills and experiences of older workers.

Second, providing flexible work arrangements would allow reconciling work and spending time with close others that assume higher priority at older ages. Third, good employment conditions are required, including addressing age discrimination. These three areas will contribute to create a positive working environment that is more in line with the focus on emotionally rewarding experiences that increases at older ages.

Although governments focus their policies on increasing labour force participation, the value of unpaid work should also be considered in evaluating the contributions of older adults. Older adults contribute to society in many ways. For example, by taking care of the ill or disabled, by taking care of grandchildren, as well as participating in formal voluntary work. Research by National Seniors Australia estimated the value of older adults' voluntary work to be A\$2 billion per year, the value of caring for people with disabilities to be A\$3.9 billion per year, and the value of the childcare that older adults provide to be about A\$911 million per year (National Seniors Australia Productive Ageing Centre, 2009). This is an enormous contribution which deserves greater appreciation by policy makers and members of the community. However, while this contribution is to be appreciated, it should not be assumed that all older adults would like to participate in paid work or voluntary work after retirement. It is important to have policies that promote productive engagements in later life for those who want to participate in these productive activities (Loh & Kendig, 2013), without undervaluing those who do not.

It is the task of governments, employers, and the community as a whole to ensure that the potential of older adults, as well as their needs, motivations and choices, are considered when evaluating policies related to work, retirement and other forms of participation. As Moen and Flood (2013) state, "the bonus years of health and vitality producing an emerging encore life stage can only promote public engagement if those in this age group can find training options and jobs, paid or unpaid, that are flexible and reduced in time commitments" (p. 227). At the same time, older adults themselves, as well as those in mid-adulthood, are well-advised to think about their social relationships and plan for activities, formal or informal, that will allow them to maintain continuous engagement during the transition to retirement and beyond.

8.4.Conclusion

This study has shown that older adults' social connectedness and the process of retirement are not independent. This builds on previous research showing that several elements, including health, financial security, education and marital relationships, are important in understanding retirement transitions. This thesis has contributed to knowledge by showing that social connectedness, particularly network structure, social support and formal social engagement, also play a significant role in the process of retirement.

Consistent with the concept of a gendered life course, this thesis has shown that the role of social connectedness in the process of retirement varies by sex and the aspect of social connectedness in question. For males, productive activities play the most significant role and there is evidence of productive role replacement between paid work and voluntary work. In addition, a 'honeymoon' effect was observed regarding network structure. Results for males suggest a significant impact of the process of retirement on social connectedness. In contrast, social connectedness, in terms of network structure and social support, acts as a 'pull' factor for females to move into retirement. These findings support the thesis that, because of a trade-off between work and social connectedness, those who have built strong relationships over their life course have a stronger motivation to retire.

It is expected that the findings and questions raised by this thesis will encourage discussion about retirement and social connectedness, and inform future research in this area. It is important to take a holistic approach when studying life course transitions such as retirement. Since social connectedness has important implications for older adults' health and well-being, it should be given a central role.

In order to further increase our understanding of this complex association, more comprehensive research on retirement transitions would ideally include indicators of different aspects of social connectedness and the different phases in the process of retirement, along with multiple definitions of retirement and work-to-retirement trajectories. The importance of social relationships and social participation over the life course, particularly at older ages, requires that social connectedness be considered a key aspect of the retirement research agenda. Policies directed at prolonging working lives should take into account the social connectedness characteristics and behaviour of the older population.

References

- Adair, T., & Temple, J. (2012). *Barriers to mature age labour force engagement in Australia: Report on the 2011/12 national survey on the barriers to employment for mature age people*. National Seniors Productive Ageing Centre: Canberra.
- Antonucci, T. C. (1985). Personal characteristics, social networks and social behavior. In R. H. Binstock & E. Shanas (Eds.), *Handbook of aging and the social sciences* (pp. 94-128). New York: Van Nostrand Reinhold.
- Antonucci, T. C., & Akiyama, H. (1987a). An examination of sex differences in social support among older men and women. *Sex Roles*, 17(11-12), 737-749. doi:10.1007/bf00287685
- Antonucci, T. C., & Akiyama, H. (1987b). Social networks in adult life and a preliminary examination of the convoy model. *Journal of Gerontology*, 42(5), 519-527. doi:10.1093/geronj/42.5.519
- Antonucci, T. C., Fiori, K. L., Birditt, K., & Jackey, L. M. H. (2010). Convoys of social relations : Integrating life-span and life-course perspectives. In R. M. Lerner, M. E. Lamb, & A. M. Freund (Eds.), *Handbook of lifespan development* (pp. 434-473). John Wiley & Sons. doi:10.1002/9780470880166
- Atchley R. C. (1971). Retirement and leisure participation: Continuity or crisis? *The Gerontologist*, 11 (1), 13-17. doi:10.1093/geront/11.1_part_1.13.
- Atchley, R. C. (1982). Retirement as a social institution. *Annual Review of Sociology*, 8, 263-287. doi:10.1146/annurev.so.08.080182.001403
- Atchley, R. C. (1989). A continuity theory of normal aging. *The Gerontologist*, 29(2), 183-190. doi:10.1093/geront/29.2.183
- Atchley, R.C., & Barusch, A. (2004). *Social forces and aging: An introduction to social gerontology* (10th Ed.). Wadsworth: Cengage Learning.
- Australian Bureau of Statistics. (2009). *Retirement and Retirement Intentions* (ABS Publication No. 6238.0). Canberra. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/F833D8ABF7DA08DACA25796400145CE7?opendocument>

- Australian Bureau of Statistics. (2010). *Australian Social Trends* (ABS Publication No. 4102.0). Canberra. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features40Jun+2010>
- Australian Bureau of Statistics. (2013a). *Retirement and Retirement Intentions* (ABS Publication No. 6238.0). Canberra. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/D85E2A6345A76BF5CA25710C007481A0?opendocument>
- Australian Bureau of Statistics. (2013b). *Gender Indicators* (ABS Publication No. 4125.0). Canberra. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4125.0~Jan%202013~Main%20Features~Contents~1>
- Australian Bureau of Statistics. (2014). *Australian Historical Population Statistics* (ABS Publication No. 3105.0.65.001). Canberra. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3105.0.65.001>
- Australian Government. (n.d.). Australian Government Business website report on employing mature age workers. Retrieved from <http://www.business.gov.au/business-topics/employing-people/diversity-in-the-workplace/Pages/employing-mature-aged-workers.aspx>.
- Australian Human Rights Commission. (2012). *Working past our 60s. Reforming laws and policies for the older worker*. Retrieved from <https://www.humanrights.gov.au/our-work/age-discrimination/publications/working-past-our-60s-reforming-laws-and-policies>.
- Australian Human Rights Commission. (2015). *National prevalence survey of age discrimination in the workplace*. Retrieved from <https://www.humanrights.gov.au/our-work/age-discrimination/publications/national-prevalence-survey-age-discrimination-workplace>.
- Australian Institute of Health and Welfare. (October, 2015). Australian Institute of Health and Welfare website report on life expectancy. Retrieved from <http://www.aihw.gov.au/deaths/life-expectancy/>

- Bacon, B. (1997). Work, retirement and dependency. *People and Place*, 5(2), 26-39. Retrieved from <http://search.informit.com.au.virtual.anu.edu.au/documentSummary;res=IELAPA;dn=980100394>
- Beehr, T. A. (1986). The process of retirement: A review and recommendations for future investigation. *Personnel Psychology*, 39, 31-55. doi:10.1111/j.1744-6570.1986.tb00573.x
- Beehr, T. A., Glazer, S., Nielson, N. L., & Farmer, S. J. (2000). Work and nonwork predictors of employees' retirement ages. *Journal of Vocational Behavior*, 57(2), 206–225. doi:10.1006/jvbe.1999.1736
- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science & Medicine*, 51, 843-857. doi:10.1016/S0277-9536(00)00065-4
- Blekesaune, M. & Solem, P. E. (2005). Working conditions and early retirement. *Research on Aging*, 27, 3-30. doi:10.1177/0164027504271438
- Booth, H., Crawford, H., Windsor, T. D., Rioseco, P., Bradley, C., Chen. L., & Ackland, R. (2013). *Staying connected: Social engagement and wellbeing among mature age Australians*. Canberra: National Seniors Productive Ageing Centre. Retrieved from <https://web.archive.org/web/20130410183548/http://www.productiveageing.com.au/userfiles/file/Staying%20Connected%20Final.pdf>
- Booth, H., Rioseco, P., & Crawford, H. (in press). What can reverse causation tell us about demographic differences in the social network and social support determinants of self-rated health in later life? *Vienna Yearbook of Population Research*.
- Borland, J. (2005). Transitions to retirement - a review (Report no. 34). Melbourne Institute Working Paper Series. Department of Economics and Melbourne Institute of Applied Economic and Social Research, University of Melbourne. Retrieved from https://www.melbourneinstitute.com/downloads/labour/34_FinReport.pdf

- Borland, J., & Warren, D. (2006). *Labour force outcomes for the mature age population* (Project 05/2005). Report prepared for the Australian Government Department of Employment and Workplace Relations, Melbourne Institute of Applied Social and Economic Research. Retrieved from <https://melbourneinstitute.com/downloads/labour/5-05%20Final%20Published%20Report.pdf>
- Bossé, R., Aldwin, C. M., Levenson, M. R., Workman-Daniels, K., & Ekerdt, D. J. (1990). Differences in social support among retirees and workers: findings from the Normative Aging Study. *Psychology and Aging*, 5(1), 41–47. doi:10.1093/geronj/48.4.P210
- Bossé, R., Aldwin, C. M., Levenson, M. R., Spiro, A., & Mroczek, D. K. (1993). Change in social support after retirement: longitudinal findings from the Normative Aging Study. *Journal of Gerontology*, 48(4), 210–217. doi:10.1093/geronj/48.4.P210
- Bowling, A., & Grundy, E. (1998). The association between social networks and mortality in later life. *Reviews in Clinical Gerontology*, 8(4), 353–361. doi:10.1017/S095925989800848X
- Brooke, L., & Taylor, P. (2005). Older workers and employment: managing age relations. *Ageing and Society*, 25(3), 415–429. doi:10.1017/S0144686X05003466
- Buddelmeyer, H., Lee, W.-S., & Wooden, M. (2010). Low-paid employment and unemployment dynamics in Australia. *Economic Record*, 86, 28–48. doi: 10.1111/j.1475-4932.2009.00595.x
- Butterworth, P., & Rodgers, B. (2007). *His retirement or Hers? Retirement and wellbeing within families*. Department Family & Community Services. Manuscript provided by authors.
- Cai, L., & Kalb, G. (2007). Health status and labour force status of older working-age Australian men. *Australian Journal of Labour Economics*, 10(4), 227–252. Retrieved from <http://search.proquest.com.virtual.anu.edu.au/docview/204092464?accountid=8330>

- Canduela, J., Dutton, M., Johnson, S., Lindsay, C., McQuaid, R. W., & Raeside, R. (2012). Ageing, skills and participation in work-related training in Britain: assessing the position of older workers. *Work, Employment & Society*, 26(1), 42–60. doi:10.1177/0950017011426303
- Carlson, M. C., Seeman, T., & Fried, L.P. (2000). Importance of generativity for healthy aging in older women. *Aging (Milano)*, 12(2), 132-140.
- Caro, F. G., & Bass, S. A. (1997). Receptivity to volunteering in the immediate postretirement period. *Journal of Applied Gerontology*, 16(4), 427–441. doi:10.1177/073346489701600403
- Carstensen, L.L. (1993). Motivation for social contact across the life span: A theory of socioemotional selectivity. In J.E. Jacobs (Ed.), *Nebraska symposium on motivation: 1992, Developmental Perspectives on Motivation*, Vol. 40, (pp. 209-254). Lincoln: University of Nebraska Press.
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 312, 1913-1915. doi:10.1126/science.1127488
- Carstensen, L. L., Fung, H. H., & Charles, S. T. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion*, 27(2), 103–123. doi:10.1023/A:1024569803230
- Carstensen, L. L., Isaacowitz, D.M., & Charles, S.T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54, 165-181.
- Cebulla, A., Butt, S., & Lyon, N. (2007). Working beyond the state pension age in the United Kingdom: the role of working time flexibility and the effects on the home. *Ageing and Society*, 27(06), 849-867. doi:10.1017/S0144686X07006320
- Choi, L. H. (2003). Factors affecting volunteerism among older adults. *Journal of Applied Gerontology*, 22, 179-196. doi:10.1177/0733464803022002001
- Chomik, R., & Piggott, J. (2012). *Mature-age labour force participation: Trends, barriers, incentives, and future potential*. (Briefing Paper 2012/01, 5) Centre of Excellence in Population Ageing Research. Retrieved from: http://www.cepar.edu.au/media/97250/participation_briefing_paper_final_with_logo.pdf

- Cohen, S. & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98, 310-357. doi:10.1037/0033-2909.98.2.310
- Coile, C. (2004). Retirement incentives and couples' retirement decisions. *Topics in Economic Analysis & Policy*, 4(1) doi:10.2202/1538-0653.1277
- Commonwealth of Australia. (2004). *A more flexible and adaptable retirement income system*. Canberra. Retrieved from http://demographics.treasury.gov.au/content/_download/flexible_retirement_income_system/flexible_retirement_income_system.pdf
- Commonwealth of Australia. (2010). *Australia to 2050: Future Challenges, Intergenerational Report (IGR) 2010*, Canberra. Retrieved from <http://archive.treasury.gov.au/igr/igr2010/default.asp>
- Commonwealth of Australia. (2015). *2015 Intergenerational Report: Australia in 2055*, Intergenerational Report (IGR) 2015, Canberra. Retrieved from <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2015/2015-Intergenerational-Report>
- Conen. W. S., Henkens, K., & Schippers, J. J. (2011). Are employers changing their behavior toward older workers? An analysis of employers' surveys 2000–2009. *Journal of Aging & Social Policy*, 23(2), 141-158. doi:10.1080/08959420.2011.551612
- Cook, W. L., & Kenny, D. A. (2005). The actor-partner interdependence model: A model of bidirectional effects in developmental studies. *International Journal of Behavioral Development*, 29(2), 101-109. doi:10.1080/01650250444000405
- Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, 73(2), 185–203. doi:10.1177/000312240807300201
- Cutrona, C. E., & Wesner, K. A. (2009). Neighbor relations. In H. T. Reis & S. Sprecher (Eds.), *Encyclopedia of human relationships* (pp. 1151-1152). SAGE Publications, Inc. doi:<http://dx.doi.org.virtual.anu.edu.au/10.4135/9781412958479.n371>

- Delpachitra, S., & Beal, D. (2002). Factors influencing planning for retirement. *Economic Papers: A Journal of Applied Economics and Policy*, 21(3), 1–13. doi:10.1111/j.1759-3441.2002.tb00320.x
- Dentinger, E., & Clarkberg, M. (2002). Informal caregiving and retirement timing among men and women: gender and caregiving relationships in late midlife. *Journal of Family Issues*, 23(7), 857–879. doi:10.1177/019251302236598
- Department of Employment. (2015a). Australian Government Department of Employment website information on Restart. Retrieved from <https://www.employment.gov.au/restart>
- Department of Employment. (2015b). Australian Government Department of Employment website information on Corporate Champions. Retrieved from <https://www.employment.gov.au/corporate-champions>
- DeVaney, S. A., & Chien, Y. (2001). A model of savings behavior and the amount saved in retirement accounts. *Journal of Financial Service Professionals*, 55(2), 72–80. Retrieved from: <http://search.proquest.com.virtual.anu.edu.au/docview/209615665/fulltextPDF?accountid=8330>
- De Vaus, D, Wells, Y, Kendig, H & Quine, S. (2007). Does gradual retirement have better outcomes than abrupt retirement? Results from an Australian panel study. *Ageing and Society*, 27 (5), 667-682. doi:10.1017/S0144686X07006228
- Earl, C., & Taylor, P. (2015). Is workplace flexibility good policy? Evaluating the efficacy of age management strategies for older women workers. *Work, Aging and Retirement*, 1(2), 214–226. doi:10.1093/workar/wau012
- Ekerdt, D. J. (2004). Born to retire: the foreshortened life course. *The Gerontologist*, 44(1), 3–9. doi:10.1093/geront/44.1.3
- Ekerdt, D. J. (2010). Frontiers of research on work and retirement. *Journal of Gerontology: Social Sciences*, 65B(1), 69–80. doi:10.1093/geronb/gbp109
- Ekerdt, D. J., Bossé, R., & Levkoff, S. (1985). An empirical test for phases of retirement: findings from the Normative Aging Study. *Journal of Gerontology*, 40(1), 95–101. doi:10.1093/geronj/40.1.95

- Ekerdt, D. J., & DeViney, S. (1993). Evidence for a preretirement process among older male worker. *Journal of Gerontology*, 48(2), 35–43. doi:10.1093/geronj/48.2.S35
- Ekerdt, D. J., DeViney, S., & Kosloski, K. (1996a). Profiling plans for retirement. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 51(3), S140–149. doi:10.1093/geronb/51B.3.S140
- Ekerdt, D. J., DeViney, S., & Kosloski, K. (1996b). *Stability and change in plans for retirement*. HRS/AHEAD Working Paper Series (Report No. 96-035). University of Michigan Population Studies Center. Retrieved from <http://www.umich.edu/~hrswww/papers/hrs95.html>.
- Elder, G. H., Jr. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly*, 57, 4-15. Retrieved from <http://www.jstor.org.virtual.anu.edu.au/stable/2786971>
- Elder, G. H., Jr., Johnson, M. K., & Corsnoe, R. (2003). The emergence and development of life course theory. In J. T. Mortimer, M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 3-19). Hingham, MA, USA: Kluwer Academic Publishers.
- Elovainio, M., Kivimäki, M., Vahtera, J., Ojanlatva, A., Korkeila, K., Suominen, S., Helenius, H., & Koskenvuo, M. (2003). Social support, early retirement, and a retirement preference: A study of 10,489 Finnish adults. *Journal of Occupational and Environmental Medicine*, 45(4), 433–439. doi:10.1097/01.jom.0000058334.05741.7a
- Evandrou, M., & Glaser, K. (2003). Combining work and family life: the pension penalty of caring. *Ageing and Society*, 23(5), 583-602. doi:10.1017/S0144686X03001314
- Evans, L., Ekerdt, D. J., & Bossé, R. (1985). Proximity to retirement and anticipatory involvement: findings from the Normative Aging Study. *Journal of Gerontology*, 40(3), 368–74. doi:10.1093/geronj/40.3.368

- Feldman, D. C. (1994). The decision to retire early: a review and conceptualization. *The Academy of Management Review*, 19(2), 285-311. Retrieved from <http://www.jstor.org/stable/258706>
- Fiori, K. L., Antonucci, T. C., & Cortina, K. S. (2006). Social network typologies and mental health among older adults. *Journal of Gerontology: Psychological Sciences*, 61B, P25-P32. doi:10.1093/geronb/61.1.P25
- Fiori, K. L., & Jager, J. (2012). The impact of social support networks on mental and physical health in the transition to older adulthood: A longitudinal, pattern-centered approach. *International Journal of Behavioral Development*, 36(2), 117-129. doi: 10.1177/0165025411424089
- Freund, A. M., Nikitin, J., & Ritter, J. O. (2009). Psychological consequences of longevity. *Human Development*, 52(1), 1-37. doi:10.1159/000189213
- Friedberg, L., Sun, W., & Webb, A. (2008). *What effect do time constraints have on the age of retirement?* (Working Paper No. 2008-17). Center for Retirement Research Boston College Working Paper. Retrieved from http://crr.bc.edu/wp-content/uploads/2008/12/wp_2008-17-508.pdf
- Fullerton, H. N., Jr. (1999). Labor force participation: 75 years of change, 1950-98 and 1998-2025. *Monthly Labor Review*, 122(12), 3-12.
- Gall, T. L., Evans, D. R., & Howard, J. (1997). The retirement adjustment process: changes in the well-being of male retirees across time. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 52(3), P110-117. doi:10.1093/geronb/52B.3.P110
- George, L. K., Fillenbaum, G. G., & Palmore, E. (1984). Sex differences in the antecedents and consequences of retirement. *Journal of Gerontology*, 39(3), 364-371. doi:10.1093/geronj/39.3.364
- Gill, S. C., Butterworth, P., Rodgers, B., Anstey, K. J., Villamil, E., & Melzer, D. (2006). Mental health and the timing of men's retirement. *Social Psychiatry and Psychiatric Epidemiology*, 41(7), 515-22. doi:10.1007/s00127-006-0064-0

- Glaser, K., Evandrou, M., & Tomassini, C. (2006). Multiple role occupancy and social participation among midlife wives and husbands in the United Kingdom, *International Journal of Aging and Human Development*, 63(1), 27–47. doi:10.2190/7LGV-01W9-KQBL-4121
- Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380. Retrieved from <http://www.jstor.org/stable/2776392>
- Greenfield, E. A., & Marks, N. F. (2004). Formal volunteering as a protective factor for older adults' psychological well-being. *Journal of Gerontology: Social Sciences*, 59B, S258–S264. doi:10.1093/geronb/59.5.S258
- Griffin, B., Hesketh, B., & Loh, V. (2012). The influence of subjective life expectancy on retirement transition and planning: A longitudinal study. *Journal of Vocational Behavior*, 81(2), 129–137. doi:10.1016/j.jvb.2012.05.005
- Gurung, R. A. R., Taylor, S. E., & Seeman, T. E. (2003). Accounting for changes in social support among married older adults: insights from the MacArthur Studies of Successful Aging. *Psychology and Aging*, 18(3), 487–96. doi:10.1037/0882-7974.18.3.487
- Gustman, A. L., & Steinmeier, T. L. (1986). A structural retirement model. *Econometirca*, 54(3), 555-584. Retrieved from <http://search.proquest.com.virtual.anu.edu.au/docview/214872939?pq-origsite=summon>
- Gustman, A. L., & Steinmeier, T. L. (2004). Social security, pensions and retirement behaviour within the family. *Journal of Applied Econometrics*, 19(6), 723–737. Retrieved from <http://www.jstor.org/stable/25146319>
- Hamilton, C., & Hamilton, M. (2006). *Baby Boomers and retirement: Dreams, fears and anxieties* (Discussion Paper N. 89). The Australia Institute, Sydney. Retrieved from http://www.tai.org.au/documents/dp_fulltext/DP89.pdf
- Han, S.-K., & Moen, P. (1999). Work and family over time: A life course approach. *The ANNALS of the American Academy of Political and Social Science*, 562(1), 98–110. doi:10.1177/0002716299562001007
- Hayward, M., & Hardy, M. (1985). Early retirement processes among older men. *Research on Aging*, 7, 491-515. doi:10.1177/0164027585007004001

- Henkens, K. (1999). Retirement intentions and spousal support: a multi-actor approach. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 54(2), S63–73. doi:10.1093/geronb/54B.2.S63
- Henkens, K., & Tazelaar, F. (1994). Early retirement of civil servants in the Netherlands. *Journal of Applied Social Psychology*, 24(21), 1927-1943. doi: 10.1111/j.1559-1816.1994.tb00568.x
- Henkens, K., & van Dalen, H. (2002). Early retirement systems and behavior in an international perspective. Retrieved from https://www.researchgate.net/publication/228750279_Early_retirement_systems_and_behavior_in_an_international_perspective
- Henkens, K., & van Solinge, H. (2002). Spousal influences on the decision to retire. *International Journal of Sociology*, 32(2), 55–74. Retrieved from <http://www.jstor.org/stable/20628649>
- Hochguertel, S. (2010). *Self-employment around retirement age* (Report No. 07/2010-030) Network for Studies on Pensions, Aging and Retirement discussion paper (NETSPAR). Retrieved from <http://arno.uvt.nl/show.cgi?fid=107138>
- Hoffman, L., & Stawski R. S. (2009). Persons as contexts: evaluating between-person and within-person effects in longitudinal analysis. *Research in Human Development*, 6(2-3), 97-120. doi:10.1080/15427600902911189
- Holtmann, A. G., Ullmann, S. G., Fronstin, P., & Longino, J., C.F. (1994). The early retirement plans of women and men: An empirical application. *Applied Economics*, 26(6), 591-602.
- Honig, M. (1996). Retirement expectations: Differences by race, ethnicity and gender. *The Gerontologist*, 36, 373–382. doi:10.1093/geront/36.3.373
- Humpel, N., O'Loughlin, K., Wells, Y., & Kendig, H. (2009). Ageing baby boomers in Australia: Evidence informing actions for better retirement. *Australian Journal of Social Issues*, the, 44(4), 399-415. Retrieved from <http://search.proquest.com.virtual.anu.edu.au/docview/340382975?accountid=8330>

- Huxhold, O., Miche, M. and Schüz, B. (2013). Benefits of having friends in older ages: differential effects of informal social activities on well-being in middle-aged and older adults. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69(3), 366-375. doi:10.1093/geronb/gbt029.
- Hyde, M., Ferrie, J., Higgs, P., Mein, G., & Nazroo, J. (2004). The effects of pre-retirement factors and retirement route on circumstances in retirement: findings from the Whitehall II study. *Ageing and Society*, 24(2), 279-296. doi:10.1017/S0144686X03001624
- Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: a review of twenty-seven community studies. *Journal of Health and Social Behavior*, 38, 21-37. Retrieved from <http://www.jstor.org.virtual.anu.edu.au/stable/2955359>
- Independent Sector. (2000). *America's senior volunteers*. Washington, DC: Independent Sector. Retrieved from https://www.independentsector.org/uploads/Resources/americas_senior_volunteers.pdf
- Jackson, N., & Walter, M. (2010). Which of Australia's baby boomers expect to delay their retirement? An occupational overview. *Australian Bulletin of Labour*, 36(1), 29-83. Retrieved from <http://search.informit.com.au.virtual.anu.edu.au/fullText;dn=940431359711106;res=IELAPA>
- Jackson, N., Walter, M., Felmingham, B., & Spinaze, A. (2006). Will older workers change their retirement plans in line with government thinking? A review of recent literature on retirement intentions. *Australian Bulletin of Labour*, 32(4), 315-344. Retrieved from <http://search.informit.com.au.virtual.anu.edu.au/fullText;dn=949088430755179;res=IELAPA>
- Jefferson, T. (2005). Women and retirement incomes in Australia: A review. *Economic Records*, 81(254), 273-291. Retrieved from <http://search.proquest.com.virtual.anu.edu.au/docview/219662147?accountid=8330>
- Jefferson, T. (2009). Women and retirement pensions: A research review. *Feminist Economics*, 15(4), 115-145. doi:10.1080/13545700903153963

- Jokela, M., Ferrie, J. E., Gimeno, D., Chandola, T., Shipley, M. J., Head, J., Vahtera, J., Westerlund, H., Marmot, M. G., & Kivimäki, M. (2010). From midlife to early old age: health trajectories associated with retirement. *Epidemiology*, 21(3), 284-290. doi:10.1097/EDE.0b013e3181d61f53
- Jylhä, M. (2009). What is self-rated health and why does it predict mortality? Towards a unified conceptual model. *Social Science & Medicine*, 69, 307-316.
doi:10.1016/j.socscimed.2009.05.013
- Kendig, H., Wells, Y., O'Loughlin, K., & Heese, K. (2013). Australian baby boomers face retirement during the global financial crisis. *Journal of Aging & Social Policy*, 25(3), 264-80. doi:10.1080/08959420.2013.795382.
- Kendig, H., Browning, C. J., Thomas, S. A., & Wells, Y. (2014). Health, lifestyle, and gender influences on aging well: An Australian longitudinal analysis to guide health promotion. *Frontiers in Public Health*, 2, 1-9.
doi:10.3389/fpubh.2014.00070
- Kilty, K. M., & Behling, J. H. (1985). Predicting the retirement intentions and attitudes of professional workers. *Journal of Gerontology*, 40, 219-27.
doi:10.1093/geronj/40.2.219
- Kim, H., & DeVaney, S. A. (2005). The selection of partial or full retirement by older workers. *Journal of Family and Economic Issues*, 26(3), 371-393.
doi:10.1007/s10834-005-5903-8
- Kim, J. E., & Moen, P. (2002). Retirement transitions, gender, and psychological well-being: a life-course, ecological model. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 57, P212-222.
doi:10.1093/geronb/57.3.P212
- Knox, G. (2003). *Retirement intentions of mature age workers*. Commonwealth Department of Family and Community Services, Paper for the Australian Social Policy Conference, University of New South Wales, 9 – 11 July 2003. Retrieved from https://www.melbourneinstitute.com/downloads/hilda/Bibliography/Conference_Papers/Knox_RETIREMENT_INTENTIONS_OF_MATURE_AGE_WORKERSpdf.pdf

- Kohler, U., & F. Kreuter. (2012). *Data analysis using Stata*. (3rd Edition). College Station, TX: Stata Press.
- Kosloski, K., Ekerdt, D., & DeViney, S. (2001). The role of job-related rewards in retirement planning. *Journal of Gerontology: Psychological Sciences*, 56B(3), 160-169. doi:10.1093/geronb/56.3.P1607
- Kubicek, B., Korunka, C., Hoonakker, P., & Raymo, J. M. (2010). Work and family characteristics as predictors of early retirement in married men and women. *Research on Aging*, 32(4), 467–498. doi:10.1177/0164027510364120
- Lancee, B., & Radl, J. (2012). Social connectedness and the transition from work to retirement. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 67(4), 481-490. doi:10.1093/geronb/gbs049
- Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging*, 17(1), 125–139. doi:10.1037//0882-7974.17.1.125
- Lansford, J. E., Sherman, A. M., & Antonucci, T. C. (1998). Satisfaction with social networks: An examination of socioemotional selectivity theory across cohorts. *Psychology and Aging*, 13(4), 544-552. doi:10.1037/0882-7974.13.4.544
- Li, Y. & Ferraro, K. (2005). Volunteering and depression in later life: Social benefits or selection processes? *Journal of Health and Social Behavior*, 46, 68-84. doi:10.1177/002214650504600106
- Litwin, H. (2001). Social network type and morale in old age. *The Gerontologist*, 41, 516-524. doi:10.1093/geront/41.4.516
- Litwin, H. (2006). Social networks and self-rated health: a cross-cultural examination among older Israelis. *Journal of Aging and Health*, 18(3), 335-358. doi:10.1177/0898264305280982
- Litwin, H. (2011). The association between social network relationships and depressive symptoms among older Americans: what matters most? *International Psychogeriatrics*, 23, 930-940. doi:10.1017/S1041610211000251

- Litwin, H., & Shiovitz-Ezra, S. (2011). Social network type and subjective well-being in a national sample of older americans. *The Gerontologist*, 51(3), 379-388. doi:10.1093/geront/gnq094
- Loh, V., & Kendig, H. (2013). Productive engagement across the life course: Paid work and beyond. *Australian Journal of Social Issues*, 48(1), 111–137. Retrieved from <http://hdl.handle.net/1885/11340>
- Lubben, J. (2002). The Lubben Social Network Scale (LSNS). Retrieved from <http://www.bc.edu/schools/gssw/lubben.html>
- Lumsdaine, R. L & Vermeer, S.J.C. (2015). Retirement timing of women and the role of care responsibilities for grandchildren. *Demography*, 52, 433-454. doi:10.1007/s13524-015-0382-5
- Luoh, M.-C., & Herzog, A. R. (2002). Individual consequences of volunteer and paid work in old age: health and mortality. *Journal of Health and Social Behavior*, 43(4), 490–509. Retrieved from <http://search.proquest.com.virtual.anu.edu.au/docview/201667014?accountid=8330>
- McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology*, 61(1), 517–542. doi:10.1146/annurev.psych.093008.100507
- McCrae R.R., & Costa P.T. (2008). The five-factor theory of personality. John O.P., Robins R.W., & Pervin L.A. (Eds.), *Handbook of personality: theory and research*. (3rd ed. pp. 159-181). New York: Guilford.
- McDonald, P. (2011). Employment at older ages in Australia: determinants and trends. In T. Griffin & F. Beddie. *Older workers: research reading*. National Centre for Vocational Educational Research (pp. 25-41). Retrieved from http://cepar.edu.au/media/49424/mcdonald_employment_at_older_ages_in_australia__ncverreport.pdf
- Mein, G., Martikainen, P., Stansfeld, S. A., Brunner, E. J., Fuhrer, R., & Marmot, M. G. (2000). Predictors of early retirement in British civil servants. *Age and Ageing*, 29, 529-536. doi:10.1093/ageing/29.6.529

- Melzer, D., Buxton, J., & Villamil, E. (2004). Decline in common mental disorder prevalence in men during the sixth decade of life. *Social Psychiatry and Psychiatric Epidemiology*, 39(1), 33-38. doi:10.1007/s00127-004-0704-1
- Mensheds Australia. (n. d.). Home. Retrieved from <http://www.mensheds.org.au/>
- Mermin, G. B. T., Johnson, R. W., & Murphy, D. P. (2007). Why do boomers plan to work longer? *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 62(5), S286–294. Retrieved from <http://psychsocgerontology.oxfordjournals.org.virtual.anu.edu.au/content/62/5/S286.full>
- Moen, P. (1996). A life course perspective on retirement, gender, and well-being. *Journal of Occupational Health Psychology*, 1(2), 131–44. doi:10.1037/1076-8998.1.2.131
- Moen, P. (2001). The gendered life course. In L. K. George & R. H. Binstock (Eds.), *Handbook of aging and the social sciences* (5th ed., pp. 179–196). San Diego, CA: Academic Press.
- Moen, P., Erickson, W.A., Agarwal, M., Fields, V., & Todd, L. (2000). *The Cornell Retirement and Well-Being Study: Final report*. Ithaca, New York: Bronfenbrenner Life Course Center, Cornell University. Retrieved from: http://worlddatabaseofhappiness.eur.nl/hap_bib/freetexts/moen_p_2000.pdf
- Moen, P., & Fields, V. (2002). Midcourse in the United States: Does unpaid community participation replace paid work? *Ageing International*, 27(3), 21-48. doi:10.1007/s12126-003-1001-0
- Moen, P. & Flood, S. (2013). Limited engagements? Women's and men's work/volunteer time in the encore life course stage. *Social Problems*, 60, 2, p. 206-233. doi: 10.1525/sp.2013.11120
- Moen, P., Kim, J. E., & Hofmeister, H. (2001). Couples' work/retirement transitions, gender, and marital quality. *Social Psychology Quarterly*, 64(1), 55. doi:10.2307/3090150

- Montalto, C. P., Yuh, Y., & Hanna, S. (2000). Determinants of planned retirement age. *Financial Services Review*, 9, 1-15. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.392.5403&rep=rep1&type=pdf>
- Morrow-Howell, N. (2010). Volunteering in later life: research frontiers. *Journal of Gerontology: Social Sciences*, 65B(4), 461–469, doi:10.1093/geronb/gbq024.
- Musick, M. A., Herzog, A. R., & House, J. S. (1999). Volunteering and mortality among older adults: Findings from a national sample. *Journal of Gerontology: Social Sciences*, 54B(3), 173-180. doi:10.1093/geronb/54B.3.S173
- Musick, M. A. & Wilson, J. (2008). *Volunteers: A social profile*. Bloomington, IN: Indiana. Retrieved from <http://site.ebrary.com/lib/anua/reader.action?docID=10212568>
- Mutchler, J. E., Burr, J. A., & Caro, F. G. (2003). From paid worker to volunteer: leaving the paid workforce and volunteering in later life. *Social Forces*, 81, 1267–93. <http://www.jstor.org/stable/3598115>
- Myers, S. M. & Booth, A. (1996). Men's retirement and marital quality. *Journal of Family Issues*, 17(3), 336-357. doi:10.1177/019251396017003003
- National Seniors Productive Ageing Centre. (2009). *Still putting in: measuring the economic and social contributions of older Australians*. Research Report, Canberra, National Seniors Productive Ageing Centre, Department of Health and Ageing.
- National Seniors Productive Ageing Centre. (2011). *Ageing & the barriers to mature age labour force participation in Australia*. Research Report, Canberra, National Seniors Australia Productive Ageing Centre.
- Newsom, J.T., Nishishiba, M., Morgan, D.L., & Rook, K. (2003). Relative importance of three domains of positive and negative social exchanges: A longitudinal model with comparable measures. *Psychology and Aging*, 18(4), 746–754. doi:10.1037/0882-7974.18.4.746

- Noone, J., Alpass, F., & Stephens, C. (2010). Do men and women differ in their retirement planning? Testing a theoretical model of gendered pathways to retirement preparation. *Research on Aging*, 32(6), 715–738. doi:10.1177/0164027510383531
- Oakman, J., & Wells, Y. (2013). Retirement intentions: What is the role of push factors in predicting retirement intentions? *Ageing and Society*, 33(6), 988–1008. doi:10.1017/S0144686X12000281
- OECD (2011). *Pensions at a glance 2011: Retirement-income systems in OECD and G20 countries*. OECD, Paris. Retrieved from http://www.oecd-ilibrary.org/content/book/pension_glance-2011-en
- Okun, M. (1994). The relation between motives for organizational volunteering and frequency of volunteering by elders. *Journal of Applied Gerontology*, 13, 115–126. doi:10.1177/073346489401300201
- O'Loughlin, K., N. Humpel, & H. Kendig (2010). Impact of the global financial crisis on employed Australian baby boomers: A national survey. *Australasian Journal on Ageing*, 29(2), 88–91. doi:10.1111/j.1741-6612.2010.00425.x
- Palmore, E. B., Fillenbaum, G. G., & George, L. K. (1984). Consequences of retirement. *Journal of Gerontology*, 39, 109–116. doi:10.1093/geronj/39.1.109
- Palmore, E. B., George, L. K., & Fillenbaum, G. G. (1982). Predictors of retirement. *Journal of Gerontology*, 37, 733–742. doi:10.1093/geronj/37.6.733
- Patrickson, M., & Ranzijn, R. (2004). Bounded choices in work and retirement in Australia. *Employee Relations*, 26(4), 422–432.
- Pit, S. W., Shrestha, R., Schofield, D., & Passey, M. (2010). Health problems and retirement due to ill-health among Australian retirees aged 45–64 years. *Health Policy*, 94(2), 175–181. doi:10.1016/j.healthpol.2009.09.003
- Pleau, R. L. (2010). Gender differences in postretirement employment. *Research on Aging* 32,(3) 267–303. doi: 10.1177/0164027509357706

- Potocnik, K., & Sonnentag, S. (2013). A longitudinal study of well-being in older workers and retirees: The role of engaging in different types of activities. *Journal of Occupational and Organizational Psychology*, 86, 497-521. doi:10.1111/joop.12003
- Quine, S., Wells, Y., De Vaus, D., & Kendig, H. (2007). When choice in retirement decisions is missing: Qualitative and quantitative findings of impact on well-being. *Australasian Journal on Ageing*, 26, 173-179. doi:10.1111/j.1741-6612.2007.00251.x
- Rabe-Hesketh, S., & Skrondal, A. (2012). *Multilevel and longitudinal modelling using Stata*. (3rd ed, Vol 1). College Station, TX: Stata Press.
- Raymo, J. M., & Sweeney, M. M. (2006). Work-family conflict and retirement preferences. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 61(3), 161–169.
- Sargent-Cox, K. A., Anstey, K. J., Kendig, H., & Skladzien, E. (2012). Determinants of retirement timing expectations in the United States and Australia: A cross-national comparison of the effects of health and retirement benefit policies on retirement timing decisions. *Journal of Aging & Social Policy*, 24(3), 291-308. doi:10.1080/08959420.2012.676324
- Schirle, T. (2008). Why have the labor force participation rates of older men increased since the mid-1990s. *Journal of Labor Economics*, 26(4), 549-594. Retrieved from <http://www.jstor.org.virtual.anu.edu.au/stable/10.1086/589457>
- Schuster, T. L., Kessler, R. C., & Aseltine, R. H. (1990). Supportive interactions, negative interactions, and depressed mood. *American Journal of Community Psychology*, 18, 423-438.
- Seeman, T. E., & Berkman, L. F. (1988). Structural characteristics of social networks and their relationship with social support in the elderly: Who provides support. *Social Science & Medicine*, 26(7), 737-749. doi:10.1016/0277-9536(88)90065-2

- Shacklock, K., & Brunetto, Y. (2005). Employees' description of the factors affecting their decision to retire. *International Journal of Organisational Behaviour*, 10(5), 740-756. Retrieved from http://www98.griffith.edu.au/dspace/bitstream/handle/10072/4615/29405_1.pdf?sequence=1
- Shacklock, K., Brunetto, Y., & Nelson, S. (2009). The different variables that affect older males' and females' intentions to continue working. *Asia Pacific Journal of Human Resources*, 47(1), 79–101. doi:10.1177/1038411108099291
- Shaw, B. A., Krause, N., Liang, J., & Bennett, J. (2007). Tracking changes in social relations throughout late life. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 62(2), S90–99.
- Sherman, A., & Shavit, T. (2012). How the lifecycle hypothesis explains volunteering during retirement. *Ageing and Society*, 32, 1360-1381. doi:10.1017/S0144686X11000997
- Shultz, K. S., Morton, K. R., & Weckerle, J. R. (1998). The influence of push and pull factors on voluntary and involuntary early retirees' retirement decision and adjustment. *Journal of Vocational Behavior*, 53(1), 45-57. doi:10.1006/jvbe.1997.1610
- Shultz, K.S., & Wang, M. (2011). Psychological perspectives on the changing nature of retirement. *American Psychologist*, 66(3), 170–179. doi:10.1037/a0022411
- Singer, J., & Willet, J. (2003). *Applied longitudinal data analysis. Modelling change and event occurrence*. Oxford University Press.
- Song, J., & Marks, N. (2004). Work and family predictors of retirement among married adults: Prospective evidence from the NSFH [abstract]. *The Gerontologist*, 44(1), 613-613. doi:10.1093/geront/44.Special_Issue_I.1
- Summerfield, M., Freidin, S., Hahn, M., Ittak, P., Li, N., Macalalad, N., Watson, N., Wilkins, R., & Wooden, M. (2013). *HILDA user manual – Release 12*. Melbourne Institute of Applied Economic and Social Research, University of Melbourne. Retrieved from https://www.melbourneinstitute.com/downloads/hilda/User%20Manual/HILDA_User_Manual_Release_12.2.pdf

- Szinovacz, M. E., & Deviney, S. (2000). Marital characteristics and retirement decisions. *Research on Aging*, 22(5), 470. doi: 10.1177/0164027500225002
- Szinovacz, M. E., Deviney, S., & Davey, A. (2001). Influences of family obligations and relationships on retirement. *Journal of Gerontology: Social Sciences*, 56B(1), 20–27.
- Tang, F. (2006). What resources are needed for volunteerism? A life course perspective. *The Journal of Applied Gerontology*, 25(5), 375-390. doi: 10.1177/0733464806292858
- Taylor, M. A., & Shore, L. M. (1995). Predictors of planned retirement age: An application of Beehr's model. *Psychology and Aging*, 10(1), 76-83. doi:10.1037/0882-7974.10.1.76
- Taylor, P., Tillsley, C., Beausoleil, J., Wilson, R., & Walker, A. (2000). *Factors affecting retirement behaviour: A literature review*. (Research Brief N. 236, summary). Retrieved from <http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/RB236.pdf>
- Thoits, P. A. (2012). Role-identity salience, purpose and meaning in life, and well-being among volunteers. *Social Psychology Quarterly*, 75(4), 360-384. doi:10.1177/0190272512459662
- Thompson, J. (2007). *The transition of older Australian workers to full and partial retirement* (Research Paper No. 1005). University of Melbourne, Department of Economics. Retrieved from http://fbe.unimelb.edu.au/__data/assets/pdf_file/0010/802828/1005.pdf
- Topa, G., Moriano, J. A., Depolo, M., Alcover, C., & Morales, J. F. (2009). Antecedents and consequences of retirement planning and decision-making: A meta-analysis and model. *Journal of Vocational Behavior*, 75(1), 38-55. doi:10.1016/j.jvb.2009.03.002
- Van den Bogaard, L., Henkens, K., & Kalmijn, M. (2014). So now what? Effects of retirement on civic engagement. *Ageing and Society*, 34(07), 1170–1192. doi:10.1017/S0144686X13000019

- Van Solinge, H., & Henkens, K. (2007). Involuntary retirement: The role of restrictive circumstances, timing, and social embeddedness. *The Journals of Gerontology*, 62B(5), S295-303.
- Van Solinge, H., & Henkens, K. (2010) Living longer, working longer? The impact of subjective life expectancy on retirement intentions and behaviour. *European Journal of Public Health*, 20(1), 47–51. doi:10.1093/eurpub/ckp118
- Van Solinge, H., & Henkens, K. (2014). Work-related factors as predictors in the retirement decision-making process of older workers in the Netherlands. *Ageing and Society*, 34(09), 1551–1574. doi:10.1017/S0144686X13000330
- Van Tilburg, T. (1992). Support networks before and after retirement. *Journal of Social and Personal Relationships*, 9(3), 433-445. doi:10.1177/0265407592093006
- Van Tilburg, T. (1998). Losing and gaining in old age: changes in personal network size and social support in a four-year longitudinal study. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 53(6), 313–233. doi:10.1093/geronb/53B.6.S313
- Van Tilburg, T. (2003). Consequences of men's retirement for the continuation of work-related personal relationships. *Ageing International*, 28(4), 345-358. doi:10.1007/s12126-003-1008-6
- Van Willigen, M. (2000). Differential benefits of volunteering across the life course. *Journal of Gerontology: Social Sciences*, 55B, 308-S318. doi:10.1093/geronb/55.5.S308
- Vlachantoni, A. (2010). The demographic characteristics and economic activity patterns of carers over 50: Evidence from the English Longitudinal Study of Ageing. *Population Trends*, 141(1), 54-76. doi:10.1057/pt.2010.21.
- Walter, M., Jackson, N., & Felmingham, B. (2008). Keeping Australia's older workers in the labour force: A policy perspective. *Australian Journal of Social Issues*, the, 43(2), 291-309. Retrieved from <http://search.informit.com.au.virtual.anu.edu.au/fullText;dn=191838793097458;res=IELAPA>

- Wang, M., & Shultz, K. S. (2010). Employee retirement: A review and recommendations for future investigation. *Journal of Management*, 36(1), 172-206. doi:10.1177/0149206309347957
- Warburton, J., Le Brocque, R., & Rosenman, L. (1998). Older People—The reserve army of volunteers?: an analysis of volunteerism among older Australians. *The International Journal of Aging and Human Development*, 46(3), 229-245. doi:10.2190/6N5V-TD6J-L8D7-BY7D
- Warren, D. (2006). *Aspects of retirement for older women*. Australian Government Office for Women. Department of Social Services. Retrieved from <https://www.dss.gov.au/our-responsibilities/women/publications-articles/economic-independence/aspects-of-retirement-for-older-women>
- Warren, D. (2008). *Retirement expectations and labour force transitions: The experience of the baby boomer generation* (Working Paper No. 24/08). Melbourne Institute Working Paper Series. Melbourne Institute of Applied Economic and Social Research, The University of Melbourne. Retrieved from https://www.melbourneinstitute.com/downloads/hilda/Bibliography/Working_Discussion_Research_Papers/2008/Warren_Retirement_Expectations_and_Labour_Force_Transitions.pdf
- Warren, D. (2015). Pathways to retirement in Australia: Evidence from the HILDA survey. *Work, Aging and Retirement*, 1(2), 144–165. doi:10.1093/workar/wau013
- Warren, D., & Oguzoglu, U. (2010). Retirement in Australia: A closer look at the financial incentives. *Australian Economic Review*, 43(4), 357-375. doi:10.1111/j.1467-8462.2010.00585.x
- Watson, N., & Wooden, M. (2002). *The Household, Income and Labour Dynamics in Australia (HILDA) survey: Wave 1 survey methodology* (HILDA Project Technical Paper Series No. 1/02). Melbourne Institute of Applied Economic and Social Research, The University of Melbourne. Retrieved from http://www.melbourneinstitute.com/downloads/hilda/bibliography/hilda_technical_papers/htec102.pdf

- Wilkins, R. (2014). Retirement expectations and outcomes. In R. Wilkins (Ed.), *Families, Incomes and Jobs, Volume 9: A statistical report on waves 1 to 9 of the Household, Income and Labour Dynamics in Australia survey* (Vol. 9, pp. 114–121). Melbourne: Melbourne Institute of Applied Economic and Social Research, The University of Melbourne. Retrieved from https://www.melbourneinstitute.com/downloads/hilda/Stat_Report/statreport-v9-2014.pdf
- Wilkins, R., Warren, D., Hahn, M., & Houn, B. (2010). *Families, incomes and jobs, Volume 5: A statistical report on waves 1 to 7 of the Household, Income and Labour Dynamics in Australia survey*. Melbourne Institute of Applied Economic and Social Research, The University of Melbourne. Retrieved from https://www.melbourneinstitute.com/downloads/hilda/Stat_Report/statreport-v5-2010.pdf
- Windsor, T., Rioseco, P., Fiori, K., Curtis, R., & Booth, H. (2016). Structural and functional social network attributes moderate the association of self-rated health with mental health in midlife and older adults. *International Psychogeriatrics*, 28(1), 49-61. doi:10.1017/S1041610215001143
- Wolcott, I. (1998). *Families in later life: dimensions of retirement* (Working Paper No.14). Australian Institute of Family Studies. Retrieved from <https://aifs.gov.au/publications/families-later-life>
- Wong, J.D., & Hardy, M.A. (2009). Women's retirement expectations: How stable are they? *Journal of Gerontology: Social Sciences*, 64B(1), 77–86, doi:10.1093/geronb/gbn010
- Ziegelmann, J. P., Lippke, S., & Schwarzer, R. (2006). Subjective residual life expectancy in health self-regulation. *Journal of Gerontology: Psychological Sciences*, 61B(4), 195-201.
- Zhu, R. (2014). *The labour force participation of Australian mature-aged men: the role of spousal participation*. National Centre for Vocational Educational Research (NCVER), Adelaide. Retrieved from <http://www.ncver.edu.au>

Appendix 1. Reasons to retire included in SNAP questionnaire

- Reached (minimum) retirement age
- Retirement of my spouse or partner
- Personal health problems
- Want to spend more time with family
- Job too stressful
- Financially advantageous to retire
- Retirement of most of my friends
- Reduced ability to perform specific work tasks
- Want to pursue other activities
- Inflexible working hours
- Financially not worth it to continue working
- Need to care for sick or disabled family member
- Job no longer satisfying
- Job loss and unable to find another

Appendix 2. Additional multiple regression subjective time to retirement females

Table 21. Multiple regression subjective time to retirement females: interaction effect between work arrangements and negative social exchanges

Variable	Model 3 with interaction	
	<i>B</i>	<i>Robust SE</i>
Age	-0.25**	0.06
Age squared	0.01	0.01
Lives with partner (ref: no)	-0.31	0.44
Self-rated health (1 excellent – 5 poor)	-0.36	0.27
Education (ref: University)		
Certificate/ diploma	0.71	0.67
High school/ apprenticeship	0.38	0.65
Intermediate/ no school	0.50	0.60
Satisfied with standard of living	-0.45	0.29
Work arrangements (ref: works full-time or self-employed)		
Works part-time	-2.77*	1.07
Subjective life expectancy	0.09*	0.03
Importance of reasons to retire (ref: not important)		
Personal health problems	1.29*	0.50
Want to spend more time with family	-1.54*	0.48
Job too stressful	-0.24	0.43
Want to pursue other activities	-1.21*	0.43
Need to care for sick/disabled family member	1.12*	0.54
Job loss and unable to find another	1.05†	0.57
Family network structure (ref: medium)		
Small	0.38	0.61
Large	-0.80†	0.44
Friend network structure (ref: medium)		
Small	0.33	0.61
Large	0.52	0.48
Network quality		
Frequency negative exchanges family	-0.95*	0.34
Frequency negative exchanges friends	1.00*	0.44
Emotional closeness to neighbour (ref: no)	-1.29*	0.52
Works part-time x Negative exchanges family	1.10*	0.51
Formal social engagement		
Does voluntary work (ref: no)	0.95	0.53
Participated in group activities (ref: no)	0.18	0.43
Intercept	4.29	2.24
	n	310
	<i>R</i> ²	0.45

Note. †0.05 < *p* < 0.07; * *p* < 0.05; ** *p* < 0.01. ref = reference category. Source: SNAP.

Appendix 3. Regression coefficients significant models Section 7.2

Table 22. Fixed effects coefficients for time: frequency of social activities with family and friends males and females

Parameter	Males		Females	
	Coeff.	SE	Coeff.	SE
t-3 Three waves before retirement	-0.36*	0.17	-0.42*	0.19
t-2 Two waves before retirement	-0.52*	0.16	-0.28†	0.17
t-1 One wave before retirement	-0.38*	0.16	-0.36*	0.17
t+1 One wave after retirement	-0.01	0.17	0.00	0.18
t+2 Two eaves after retirement	-0.53*	0.17	-0.22	0.18
t+3 Three waves after retirement	-0.34*	0.17	-0.07	0.18
<i>n</i>	89		76	
<i>F</i>	F(16,443) 2.58		F(16,357) 1.5	
<i>p</i>	0.001		0.097	

Note. Time ‘t’ indicates when retirement was reported. Time ‘t’ is the reference category, therefore, the parameters in the table show the contrasts with time ‘t’. † $p < 0.1$; * $p < 0.05$.

Table 23. Fixed effects coefficients for time: hours of voluntary work males and females

Parameter	Males		Females	
	Coeff.	SE	Coeff.	SE
t-3 Three waves before retirement	-0.27	0.62	-1.59	0.61
t-2 Two waves before retirement	-0.82	0.58	-1.29	0.56
t-1 One wave before retirement	0.06	0.58	-0.60	0.57
t+1 One wave after retirement	0.63	0.60	-0.85	0.59
t+2 Two eaves after retirement	1.58	0.61	-0.28	0.59
t+3 Three waves after retirement	1.01	0.61	-0.63	0.60
<i>n</i>	89		76	
<i>F</i>	(16,444) 3.56		F(16,356) 2.34	
<i>p</i>	0.000		0.003	

Note. Time ‘t’ indicates when retirement was reported. Time ‘t’ is the reference category, therefore, the parameters in the table show the contrasts with time ‘t’. † $p < 0.1$; * $p < 0.05$.

Table 24. Fixed effects coefficients for time: satisfaction with relationship with children males and females

Parameter	Males		Females	
	Coeff.	SE	Coeff.	SE
t-3 Three waves before retirement	-0.34†	0.19	-0.10	0.16
t-2 Two waves before retirement	-0.04	0.18	-0.16	0.15
t-1 One wave before retirement	0.06	0.18	-0.13	0.15
t+1 One wave after retirement	-0.21	0.19	-0.07	0.16
t+2 Two eaves after retirement	-0.46*	0.19	0.10	0.16
t+3 Three waves after retirement	-0.49*	0.19	0.05	0.16
<i>n</i>	83		69	
<i>F</i>	(16,414) 2.11		(16,323) 2.78	
<i>p</i>	0.007		0.000	

Note. Time ‘t’ indicates when retirement was reported. Time ‘t’ is the reference category, therefore, the parameters in the table show the contrasts with time ‘t’. † $p < 0.1$; * $p < 0.05$.

Appendix 4. Conference presentations based on this study

Rioseco, P. (2015). Retirement and trajectories of social engagement in older men and women. International Association of Gerontology and Geriatrics (IAGG) Asia/Oceania Congress, Chiang Mai, October 19-22.

Rioseco, P. (2014). Change in social connectedness during the retirement transition. Australian Association of Gerontology Annual Conference, Adelaide, November 26-28.

Rioseco, P. (2014). Social connectedness and retirement status in Australia: Results from SNAP. Proceedings of the 13th Emerging Researchers in Ageing Conference, Adelaide, 24-25 November, pp. 95-98.

Rioseco, P. (2014). Subjective time to retirement in older workers: gender differences in the role of social networks and the importance of reasons to retire. International Sociological Association World Congress, Yokohama, July 13-19.

Rioseco, P. (2013). The effect of subjective life expectancy on change in expected retirement age over time. Poster presented at the International Conference Health, Education and Retirement over the Prolonged Life Cycle, Vienna, November 27-29.

Rioseco, P. (2013). Social connectedness and retirement status among older Australians: results from SNAP. Poster presented at the Gerontological Society of America Annual Meeting, New Orleans, November 20-24.

Rioseco, P. (2013). Subjective time to retirement in older workers: the role of social connectedness. Centre of Excellence in Population Ageing Research (CEPAR) International Conference, Sydney, 2-3 July.

Rioseco, P. (2013). Retirement and social connectedness: Age patterns and sex differences. International Association of Gerontology and Geriatrics (IAGG) World Congress, Seoul, June 23-27.