The Causal Impact of Living Arrangements on Quality of Life Among Older New Zealanders: The Moderating Effects of Age and Social Connectedness

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Abstract

This study examines the causal relationships between living arrangements (LA) and the quality of life (QoL) of older adults in Aotearoa New Zealand, with a specific focus on the moderating roles of age, gender, and social connectedness. Drawing on longitudinal data from the New Zealand Health, Work and Retirement Study (NZHWRS), this research employs the CASP-12 model to examine the psychosocial dimensions of QoL. Specifically, it investigates how the sub-dimensions: autonomy, control, self-realisation, and enjoyment, contribute to overall QoL, particularly in relation to various LA.

The findings reveal that living arrangements (outside of institutionalised settings) play a pivotal role in shaping the QoL of older adults. Independent living arrangements often promoted as supporting autonomy, self-esteem, and personal agency in older adults was in fact identified as being accompanied by elevated risks of loneliness and social isolation, particularly among individuals with limited social networks or familial support. In contrast, intergenerational living arrangements or being with a partner, provide opportunities for enhanced social connectedness and emotional support. Most notably older adults were found to derive greater overall QoL when living with their families. even when this came at the expense of reduced personal autonomy.

Age and gender emerged as significant moderators in the relationship between LA and QoL. Older women and individuals in advanced age cohorts exhibited distinctive patterns of QoL outcomes, underscoring the importance of tailored interventions. Moreover, the buffering effects of social connectedness were prominent, with active participation in social activities and employment serving as critical protective factors against isolation and diminished well-being. These findings underscore the multifaceted nature of "ageing in place" strategies, which, while beneficial in promoting independence, must be complemented by robust community-based social support systems to mitigate unintended negative outcomes.

This research addresses critical gaps in the existing literature by providing a nuanced understanding of the interplay between living arrangements, psychosocial factors, and demographic characteristics in influencing the QoL of older adults. The findings have substantial implications for both academic discourse, public policy and practice. Recommendations include fostering inclusive, age-friendly communities, enhancing social infrastructure, and developing policies that balance autonomy with collective support to ensure the dignity, health, and well-being of New Zealand's ageing population.

By integrating theoretical insights with empirical evidence, this study contributes to the evolving discourse on healthy ageing and offers practical solutions for improving QoL outcomes in diverse living arrangements.

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Chapter 1: Introduction and Background

This thesis examines the relationship between living arrangements (LA) and the quality of life (QoL) of older adults in Aotearoa, with the goal of deepening our understanding of the experiences of New Zealand's ageing population. By exploring how different LA influence well-being, this research seeks to contribute to policy and academic discourse on population ageing. Additionally, it aims to identify potential protective factors that could mitigate the negative impacts of ageing and inform policy that seeks to enhance social support and overall QoL of life for older adults[1].

This chapter begins by examining changes in the size, structure and distribution of New Zealand's older population, offering crucial context for both public policy and research agendas. It then explores shifts in household composition among those aged 65 and over, using recent Census data to identify key trends and changes. This analysis sets the stage for a deeper exploration of living arrangements, as they relate to the specific living circumstances of older adults in New Zealand. The chapter then shifts to exploring why a focus on QoL is critical in the context of an ageing population, then moving to examining the current policy discourse on ageing, highlighting key policy responses proposed by policymakers. A central theme in these discussions is the concept of "ageing in place"—enabling older adults to remain in their communities and live independently. By critically examining the assumptions underlying this policy approach, the chapter concludes with a series of key research questions that form the foundation of this thesis. These questions aim to provide insights into how different living arrangements impact the QoL for older adults and explore the extent to which this policy prescript operates in reality.

Population Ageing

Population ageing is considered one of the most significant global social and economic issues in the 21st century (OECD, 2019). According to the World Population Prospects, the proportion of the global population aged 65 and over is expected to rise from 10% in 2022 to 16% in 2050 (United Nations Department of Economic and Social Affairs, Population Division, 2022). Population ageing represents a fundamental and long-term change in the population age structures globally and in the New Zealand context (Newton et al., 2024; Stats NZ, 2023; United Nations Department of Economic and Social Affairs, 2017). Substantial falls in fertility (Fauser et al., 2024) following an extended post war baby boom, lasting in New Zealand's case through to the beginning of the 1970's have indelibly imprinted lasting effect on New Zealand's demographic structures and age distribution

[1] In this thesis, "**Ageing"** refers to a process that unfolds at both societal and individual levels. At a population level, ageing signifies a demographic transformation in which the number and characteristics of older individuals expand, reshaping the age structure and composition of a population. For the individual, ageing encompasses the physical, cognitive, emotional, and social changes that individuals experience as they become older. The former will be referred to as "population ageing", while the later "ageing".

(Dharmalingam et al., 2007; Stats NZ, 2021). This structural shift has been compounded through sizable improvements in life expectancy and survivorship. In New Zealand and globally, improvements in health and healthcare, increased access to education, rising standards of living, and a shift away from manual labour and higher-risk employment, is seeing people living longer than ever before (Grinin et al., 2023; Stats NZ, 2024a). In New Zealand, the average life expectancy was around 75.6 years in 1990. By 2023, it had increased to approximately 82.8 years representing a gain of 7.2 years over this period (Stats NZ, 2024a). By 2053, a quarter of New Zealanders are projected to be aged 65 and over (Stats NZ, 2024a), not dissimilar to where countries such as Japan, South Korea, Italy or Finland presently sit (OECD, 2019; United Nations Department of Economic and Social Affairs, 2019). By 2028 New Zealand will reach a million people over the age of 65 and this is estimated to increase to 1.6 million by 2058 (Stats NZ, 2024a).

Population ageing also involves structural changes in the population over 65 years, with increasing shifts from young-old, to old-old and oldest-old population groups (Garfein & Herzog; 1995, Héran, 2016). Stats NZ`s (2024b) projections[2] suggest that New Zealand's old-old population (those aged 85+) will grow by over 232% in the coming 30 years and double from 11% of the population aged 65+ to accounting for 21% of this population by 2053.

Changing Household Composition

At the same time as we are seeing an increasingly older population, the composition of New Zealand households is also changing rapidly. As Table 1 illustrates the greatest increase in household arrangements for those aged 65 and over has been in couple households either with or without children (accounting for 49% of the growth in 65+ households during the past decade). The 2023 Census identified 1 in 4 households as being a single person household, with women and people aged 65 and over the most likely to live alone. Almost half of those living alone in New Zealand were aged 65 years or older. This accounted for a quarter of all individuals 65 years and older (Stats NZ, 2024). As a consequence, changes in age composition and population ageing are key drivers of single person households. In light of the population trajectories outlined, those living alone in New Zealand are likely to become an increasingly prominent household form.

The 2023 Census (Stats NZ, 2025) also identified an increase in the proportion of multi-generational households over the past decade, in part driven by New Zealand's changing ethnic composition and expectations regarding extended family arrangements, increases in families supporting older family members and economic circumstances where families are pooling their resources through shared living arrangements (Stats NZ, 2024b). Older adults living in multi-

[2] Calculated by the author using the 2022 Base Series assuming the 50th probability percentile.

generational households increased by almost 60%, currently accounting for 11.3% of living circumstances for those over 65 (Table 1).

Table 1

Household composition for those aged 65 years and over (2023 Census)

Household Type	Proportion individuals 65+	Numbers of individuals 65+	Increase 2013 to 2023
One person	25.3%	192,201	25.1%
Couple Only	42.0%	319,800	24.0%
Couple with children	15.0%	114,000	27.9%
One-parent with children	3.0%	22,800	43.4%
Multi-family household	11.3%	86,040	58.9%
Other multi-person household	3.4%	25,920	20.0%

Source: Statistics New Zealand Census 2013 & 2023 (Stats NZ, 2015; Stats NZ, 2025)

Why is the Quality of Life of Older People Important for Research, Policy and Practice?

Improvement in QoL has been seen as a critical indicator of the success of healthy ageing policies and of nations performance in relation to its older population (Rudnicka et al., 2020; Szabó et al., 2021). Quality of life goes beyond comparisons of social or economic status or living standards, providing a more comprehensive understanding of actual living conditions, experiences and insights into how these factors influence human wellbeing and fulfilment. In research into the experiences of older adults, understanding an individual's QoL allows for a holistic evaluation across groups in different circumstances and contexts, allowing the researcher or policy maker to ask and answer fundamental questions about the ageing process. For example, does remaining in one's home alone enhance or limit older adults' QoL? As a consequence, understanding the QoL of individuals and groups can guide more effective policy making and identify areas where interventions are needed to improve wellbeing beyond merely economic or service responses (Sen, 1993).

Quality of Life as a Moral, Ethical and Human Rights Issue

Improving the QoL of older people is consistent with moral, ethical, and human rights requirements. At its core is understanding whether individuals have real opportunities to achieve their potential and live with dignity. Equity and social justice are also about ensuring that older people are not disadvantaged or marginalised by virtue of age or the factors associated with ageing. In the context of an ageing population, the disadvantages that people experience in later life are particularly noteworthy (Russell, 2024), they can include factors such as exclusion from the labour market, changes in financial circumstances, housing insecurity, loss of a partner, or the onset of ill health. Equally, social justice and equity considerations need to ensure that subgroups of older

people are not specifically disadvantaged (Alpass et al., 2023). This might include minority ethnic communities, new migrant and non-English speaking communities, men over women or vice versa, or particular age groups among older adults. From a human rights perspective it is critical that we ensure that public policy or service provision does not discriminate on the basis of age, but within this it is also about ensuring older adults are treated with dignity and respect and that their voices are heard in matters affecting their lives. Achieving greater equity in the health and well-being of older people requires active and deliberate policy and service responses that seek to improve the QoL of older adults through improved health and social systems (Sadana et al., 2016). Like young people, older people should be supported to realise the QoL that is important for New Zealand as a whole (Alpass et al., 2023; Mansvelt et al., 2014).

Within a moral and ethical framing, QoL also highlights the importance of individual freedom and allowing individuals choices and self-determination. This perspective shifts the focus from merely survival or having positive health outcomes to emphasising the significance of personal agency and choice (Sen, 1994).

The Costs of Ignoring Quality of Life

Given the association between QoL and health outcomes (described in Chapter 3 of this thesis), ignoring the QoL and well-being of the older adult population means that societies with an increasing older population, where the QoL of older peoples is neglected, will need to provide disproportionately greater health care and aged care services (Wiki et al., 2023; World Health Organisation (WHO), 2022). This can overwhelm already stressed public finances, especially as pension and health costs continue to rise (Caldera & Rouzet, 2024). Consequently, understanding and supporting health-related factors and capacities in older adults is seen as a key public health priority (Associate Minister of Health, 2016; WHO, 2022). By prioritising QoL through investments in preventive health measures, the promotion of healthy lifestyles, and the recognition of older adults' potential, policies can effectively mitigate the prevalence of chronic diseases and disabilities. This, in turn, reduces healthcare costs and contributes to broader economic benefits (Mandryk et al., 2023; WHO, 2022).

Public Policy Responses to Ageing

The shifts in the concentration and distribution of older adults in New Zealand's population, in the context of preserving the QoL of this population, have profound implications for public policy, health and welfare systems (Klavestrand & Vingård, 2009; Nakamura et al., 2022). They commence with questions about whether New Zealand has the capacity and infrastructure to cater for substantial growth of an older population, and in particular, a more than doubling of the population aged 85 plus?

The Push to extend Working Life

In terms of policy settings, the economic consequences of population ageing, resulting in increased health, welfare and superannuation costs, along with skill and labour market shortages, is placing more pressure on countries to extend working life (Baxter et al. 2021). The OECD (2019) along with other commentators (Arends et al., 2017; Ng et al., 2021; Zaidi & Howse, 2017) argue that to address the challenges of population ageing, policy makers must provide people with better choices and incentives to work at an older age. "… This will ensure that the benefits of longer, healthier lives are fully realised, while delivering continued improvements in living standards and the sustainability of higher public finances" (OECD, 2019; Oxley, 2009).

Shifts in retirement policies, such as changes in the age of eligibility for New Zealand Superannuation and the introduction of KiwiSaver, have deliberately sought to incentivise kiwis to work until at least 65 (Retirement Commission, 2016). Economic necessities may also force individuals to continue working due to insufficient retirement savings, lack of protective factors like home ownership (Herbert & Molinsky, 2020; James, 2021a), or a desire to maintain certain living standards (Yoe, 2019). Post COVID some commentators have referred to financial hardship and the loss of, or decay in the purchasing power of retirement savings, along with a "fraying social safety net" as driving more and more older workers to remain in employment (Epstein, 2022; Stoker-Walker, 2024).

While the rationale for extending working lives to meet both national and personal needs is widely debated, the impact of such extensions on the QoL and health outcomes for older adults remains unclear. Policies designed to prolong working life or address economic factors could have negative consequences on health, affecting subgroups in varying ways. For example, in New Zealand, Māori men have a life expectancy of 73.4 years[3], which is significantly lower than that of the New Zealand European population. Mandating continued employment for older workers due to increased longevity may exacerbate their vulnerability, unfairly placing on them the burden of those that have greater choices of when to retire. Furthermore, extended employment could limit older adults' ability to establish new routines and social networks once they retire, potentially leading to increased social isolation and loneliness. This issue will be examined in both the literature review below and the analysis conducted in this study. It is also important to note that New Zealand already has relatively high levels of labour market participation among older people when compared internationally, with a quarter of all New Zealanders over 65 years remaining in work (OECD, 2019; Scarpetta & di Noia, 2023; Te Ara Ahunga Ora Retirement Commission, 2019). This would suggest

[3] Stats NZ 2021 – The comparable life expectancy for New Zealand European women was 82.5 years.

that the potential for further extensions in working life across the population may be relatively limited.

Active Ageing Strategies

As described above, the economic arguments for ever increasing workforce participation among older adults is not necessarily the panacea to meeting rising concerns regarding public policy affordability associated with ageing, particularly in the context of an increasing concentration in the old-old population described above (Lee & Mason, 2017; Milken Institute School of Public Health, 2018, April 6).

The second platform found in current policy discourse is that of active ageing (Ministry of Health, 2024). Built from the theoretical underpinnings described in Chapter 2, these proponents suggest that traditional policies focused on age-related losses and dependency are no longer adequate. They call for the development of policies that support active ageing. This includes integrating active ageing principles into urban planning, healthcare, and social services to create inclusive and supportive environments for older adults. They also suggest that the active contribution of older people to society should be promoted and planned for. It is argued that this approach not only ensures the sustainability of pensions and healthcare systems but that these settings also contribute to delaying the onset of age-related health problems and enhance the QoL of older adults (Kendig & Duckett, 2001; Zaidi & Howse, 2017). The strategies proposed through this discourse equally promote extended participation in the workforce; but add to this: health promotion activities that are focussed on preventative care, physical activity and healthy lifestyles; social engagement and the facilitation of social connections with a view to combat social isolation and loneliness; providing opportunities for continued education and skill development in order to keep older adults mentally active and engaged; and creating age-friendly environments that are safe and accessible in order to support older adults to live independently for longer. While such policy measures may be actively promoted by government (Ministry of Health, 2024) funding and delivery of such age friendly programmes appear to have had relatively little traction because of resource constraints or political or community buy-in (Zaidi & Howse; 2017).

Ageing in Place

Associated with active ageing solutions, ageing in place - the ability for older adults to live independently in their own homes and communities - is increasingly promoted by policy agencies who argue numerous benefits for individuals and society. This approach aligns with the broader goals of healthy ageing, which emphasises maintaining autonomy, independence, and through this QoL for older people (Te Whatu Ora, 2023; WHO, 2015).

One of the primary arguments for ageing in place is that it is seen to support the dignity and independence of older adults. It is suggested that by remaining in familiar environments older individuals can maintain a sense of control over their lives, which contributes to their mental and emotional well-being (Ewen et al., 2017; Wiles et al., 2012). It is also argued that it can reduce the stress and disruption that can accompany transitions to institutional settings, such as nursing homes or care facilities (Spasova et al., 2018). Additionally, it is suggested that ageing in place arrangements preserve social networks, allowing older adults to continue to interact with family, friends, and community members, thereby reducing the risk of social isolation (Blok, 2022; Sarlo et al., 2019).

From a policy perspective, ageing in place is considered a more cost-effective solution compared to institutional care which is expensive and seen to place a significant strain on public healthcare systems and social services (Ewen et al., 2017). In the New Zealand context, a recent Te Whatu Ora (2023) review emphasises the importance of "ageing in place" and "needs based person-centred care solutions" as reducing, both the pressure and demand for aged care facilities and services, the fiscal pressures on the health systems to respond to population ageing, while at the same time, they claim, also improves the autonomy and QoL for older people (Moore et al., 2024).

Ageing in Place - Not Necessarily a Panacea on its Own

The shift towards ageing in place, though often viewed as ideal, is suggested as having significant drawbacks when implemented without sufficient support structures (Coyle & Dugan, 2012). Several critics suggest that this strategy, when not supported by robust social networks, community integration, and adequate care provisions, may inadvertently contribute to social isolation, loneliness, and psychological distress rather than alleviating these issues (Moore et al., 2024; Scharf et al., 2005). Many authors argue that strategies promoting ageing in place must consider not only the physical needs of older adults but also their emotional, social, and psychological well-being (Moeyersons et al., 2022; Piolatto et al., 2022). As highlighted by Coyle & Dugan (2012), robust social support systems, access to transportation, housing, and community planning are critical to ensure older people do not become socially excluded or face additional stress from inadequate resources (Pani-Harreman et al., 2021; James, 2021b). Policies that implicitly equate homeownership with independent living often overlook significant changes in housing dynamics, such as the growing number of older adults in rental contexts or facing housing insecurity. Furthermore, with ageing in place solutions there is an implicit assumption that family members will provide needed support for their partner or parent. Many commentators have suggested that this assumption is problematic, especially in the face of rising demands and complexity of support required as people age. They also suggest that there is a disproportionate burden for care falling on women (Koehn et al., 2022). Conversely, programmes that prioritise individualised solutions may fail

to support communal or family-based care support. Lilburn (2016) also suggests that such strategies need to consider the unique characteristics within which older people live such as rural settings, where supports and transport solutions are more challenging. The lack of culturally inclusive, flexible, and community-based care solutions is equally suggested as further exacerbating the risks of isolation, particularly given growing cultural and ethnic diversity and new migrants who constitute the older population (Zaidi & Howse; 2017).

Financial limitations may also compel older adults to reduce expenditures on essentials such as food or heating, which can have detrimental effects on both health and overall life quality (Berl, 2024). The inability of older individuals to manage necessary house repairs, whether due to financial constraints or an incapacity to engage with tradespeople, can further contribute to additional stressors for the individual (Bigonnesse & Chaudhury, 2021; Davey, 2006; Pani-Harreman et al., 2021; Smith, 2009; Zaidi & Howse, 2017).

Critics also raise concerns regarding safety, as many homes may not be sufficiently equipped to address the physical needs of older adults. As a result, falls at home pose not only a significant financial burden on the broader community but can also contribute to the rapid onset of disability, and involve long periods of costly rehabilitative care (Tinetti et al., 1988). Furthermore, such incidents can lead to psychological distress, reducing older adults' ability to maintain their independence and, ultimately, their capacity to remain in their communities (Gillespie et al., 2012). A recent New Zealand Productivity Commission study has suggested that at some point, providing services in the home becomes more costly and less flexible than providing care in a facility (Knopf, 2022).

Building on the above finding, a recent review of aged care arrangements in the New Zealand context has also suggested major challenges in terms of our capacity as a nation to meet the needs of older New Zealanders (Moore, et al. 2024). This review found that we are already on the “back foot” even before the substantial demographic shifts described above come into play. This analysis suggests that the aged residential care (ARC) sector is struggling to meet the needs of older New Zealanders, and that accessing ARC is increasingly linked to a resident’s ability to pay. Consequently, they suggest that there is an increasing shift towards home and community support services (HCSS), which are equally struggling. With older adults staying longer in their own homes, the failure to actively support the needs of these adults is seen to increase the acuity and complexity of admissions to ARC and hospital for this population. Findings from the review include the ongoing challenges of workforce shortages in the health and aged care sector; inadequacy of existing service models in relation to long-term geriatric care, limited capacity in chronic disease management and in responding to psychological distress; along with huge inequity in terms of access to aged care

services. These in turn point to a lack of a sustainable funding model to meet future demands (Moore, et al., 2024). This analysis also suggests that cultural barriers for Māori, Pacific and Asian older people mean that these populations are not accessing healthcare, to the same extent, when compared with New Zealand Europeans. Depressingly, this study concludes that the ARC and HCSS sectors are "under extreme pressure, and the situation may continue to worsen."

Research Aims

Ageing in place programmes have received relatively little evaluative attention (Pani-Harreman et al., 2021; MacNeil Vroomen et al., 2025). While this thesis does not specifically seek to evaluate such policies and programmes, it looks to build understanding of the relationship between living arrangements and QoL among older New Zealanders. Using data from the 2018 and 2020 New Zealand Health, Work and Retirement Study (NZHWRS), this thesis seeks to contribute to the existing literature and public policy debate. Specifically, this research will examine how various community based living arrangements impact different aspects of life quality from a psychosocial perspective, emphasising the factors that shape older adults' overall life satisfaction and sense of well-being.

A fundamental question explored in this study is the extent to which social participation, engagement in social activities, and continued involvement in work, maintain or enhance QoL for the growing population of older adults living alone in Aotearoa.

Employing a quality-of-life needs - satisfaction model (CASP-12) (Hyde et al., 2003; Wiggins et al., 2008) this analysis provides an opportunity to test existing assumptions in public policy discourse, such as the notion that independent living and ageing in place strategies preserves QoL for older adults, that QoL is rooted in personal agency, autonomy, and control, and that fostering social connections, including through participation in paid work, effectively mitigates social isolation for older adults.

Key Research Questions

1. How do different living arrangements (e.g., independent living with a partner, on your own, or in co-share arrangements with family or others) influence the QoL of older adults?
2. To what extent do individual characteristics (age, gender or the presence of disability or ill-health), moderate the relationship between living arrangements and QoL in older adults?
3. How are aspects of perceived QoL (autonomy, control, self-realisation and enjoyment) impacted by different LA.?
4. In what ways do changes in living arrangements over time (e.g., transitions from living with a partner to living alone, or living with one's family) impact older adults' QoL?

5. Is engagement in social activities, work or social connectedness associated with a higher QoL?
6. What is the relative impact of social activities (including engagement in work, engagement in social activity and social connectedness) on the wellbeing of older adults across different living arrangements? Do these factors exert similar influences, and which serves as a stronger protective factor in promoting positive QoL outcomes?
7. To what extent does involvement in work enhance QoL, and is this discrete or because work contributes to enhanced social connectedness?

Conclusion

Given the rapid ageing of New Zealand's population, coupled with growing concerns about mental distress, social isolation, and the current crisis in aged care and health systems, there is an urgent need for a comprehensive policy response to address the challenges of ageing in Aotearoa. This response must be grounded in a deeper understanding through research of the factors that shape the QoL of older New Zealanders. This understanding is essential to ensuring that individuals age with dignity and that older adults are supported in living healthy, fulfilling lives. This involves examining a range of factors, including individual characteristics, social dynamics, and the influence of policy and institutional settings, which can lead to both positive and negative outcomes. Research into the determinants of life quality can help identify the need for targeted interventions, improved health and social services, and more effective welfare practices. Furthermore, it can contribute to community development through identifying the factors that underpin inclusive, and supportive environments for older adults.

Overview of Chapters

This study of ageing is deeply rooted in an evolving interplay of theoretical perspectives, empirical insights, and policy considerations. **Chapter 2** provides an exploration of classical and contemporary psychological and sociological theoretical frameworks which have shaped ageing research and influenced policy discourse. From Functionalist perspectives such as disengagement and activity theory to modern approaches like social capital theory and life course theory, these paradigms offer valuable insights into the psychosocial dimensions of ageing. This chapter asserts that no single theoretical framework fully captures the complexities associated with research into population ageing. This chapter argues that no single theory can fully explain the complexities of population ageing. It proposes integrating multiple perspectives to better understand how individual traits, psychological processes, and personal circumstances interact over time.

Building on these theoretical perspectives, **Chapter 3** provides a critical review of the existing literature, focusing on key determinants of QoL, including LA, social connectedness, and engagement

in social activities. The review highlights gaps in current research and explores the dynamic interplay between structural and individual-level influences on well-being. The chapter also examines key definitions related to measuring QoL, social activity and social connectedness, while also addressing methodological considerations subsequently adopted in this study.

Influenced by the exploration of policy discourse, **Chapter 4** builds on the key research questions presented in this chapter, providing a detailed specification of the research objectives and hypotheses which centre on the impact of various LA on QoL. These hypotheses are aimed at understanding how structural factors, individual attributes, and psychosocial resources interplay to shape the wellbeing of older adults. Key areas proposed for investigation include the influence of living alone versus co-residing with a partner or family, the moderating effects of age, gender, disability, and social engagement, as well as an exploration of the role of work status in contributing to QoL.

Chapter 5 outlines the study's methodology, detailing the longitudinal research design, data sources, and ethical considerations. The chapter also describes key measurement tools, including CASP-12, the measurement of Social Connectedness and essential variables such as demographic factors, social networks, and living arrangements.

Following this, **Chapter 6** presents the empirical findings, analysing how different LA influence QoL over time, while also exploring moderating effects of age, gender, and disability. These findings are further interpreted in **Chapter 7**, which situates them within existing theoretical and policy debates. The discussion underscores the critical role of social connectedness in fostering well-being and reevaluates conventional assumptions about ageing in place.

Finally, **Chapter 8** offers a conclusion and implications for policy and practice, summarising key insights and advocating for comprehensive policy responses. Emphasis is placed on the need for tailored support systems that accommodate diverse living arrangements and promote robust social networks to enhance older people's QoL in later life.

Chapter 2： The Theoretical Framing of Ageing

This chapter begins by introducing early theories of ageing grounded in Functionalist paradigms, which aimed to provide universal explanations of the ageing process. These foundational theories, such as those focused on role adjustment and continued social participation in later life, have since been widely critiqued and, in many cases, disregarded for their reductive portrayals of ageing and their tendency to marginalise the lived experiences of older adults (Powell, 2006). Nonetheless, revisiting these early frameworks serves an important purpose in establishing the theoretical foundations of this study. In particular, theories such as Activity Theory offer valuable conceptual antecedents to the chapter's subsequent exploration of social capital and social connectedness, highlighting early attempts to link engagement with well-being in later life. This theoretical exploration underscores the need for more nuanced and context-sensitive theoretical approaches, which move beyond generalised models to recognise ageing as a dynamic, individualised, and socially embedded experience shaped by diverse structural and cultural forces.

Following this exploration the chapter provides a synthesis of three broad domains of theory that collectively inform the development of the research hypotheses and analytical models presented in this thesis: structural/environmental, social/relational, and psychological/intrapersonal, to offer a multidimensional framework for understanding quality of life (QoL) in older adults. The structural/environmental domain highlights the influence of life course transitions, socioeconomic resources, and living conditions on QoL outcomes, emphasising the cumulative effects of social advantage or disadvantage and the role of adaptive capacities across the lifespan. The social/relational domain underscores the importance of interpersonal connections, emotional closeness, and reciprocity, exploring how social relationships and support networks can enhance or diminish wellbeing. Finally, the psychological/intrapersonal domain addresses the internal processes through which older adults interpret, respond to, and adapt to ageing, offering insight into autonomy, emotional regulation, resilience, and the pursuit of meaning and purpose in later life. By bringing these perspectives together, this chapter proposes a synthesised theoretical framework for understanding QoL in older age, and consequently the conceptual foundation for this study.

Functionalist Theories of Ageing and Wellbeing

Functionalist theories in the study of ageing provide early conceptual frameworks for understanding how older adults adapt to the ageing process within broader social systems. Although some of these theories have since been set aside, they represent important initial efforts to explain the interaction between individual agency and structural conditions in shaping later-life roles, behaviours and wellbeing. Revisiting these theories enables a critical appraisal of their contributions

and limitations, while also helping to situate this thesis within a broader, evolving, and multi-theoretical approach (Novak, 2019).

Functionalist theory views society, such as institutions and social norms, as a complex system whose parts work together to promote stability and social order (Powell, 2006). Social institutions like the family, or healthcare are viewed as essential components that contribute to social cohesion and the wellbeing of societies' members including older adults. Three dominant theories within the functional perspective have attempted to explain how older people might deal with later-life experiences: Disengagement Theory, Continuity Theory and Activity Theory.

Disengagement Theory

Disengagement theory has significance as one of the first explorations into a theoretical conceptualisation of ageing (Achenbaum, 1995; Lynott & Lynott, 1996). The theory argues that "ageing is an inevitable mutual withdrawal or detachment that leads to reduced interaction between older people and others in the social system to which they belong" (Coleman, 1991). In this framing the older person "fades as a social actor" (Gilleard & Higgs, 2002). The theory suggests that the process of disengagement allows for the transfer of roles and responsibilities to younger generations ensuring social stability and continuity, and that the process is voluntary. As a consequence, withdrawal from social connections is viewed as a natural and beneficial part of ageing. As individuals disengage, they experience changes in their self-concept and identity in a process that has them coming to terms with their mortality and changing physical and cognitive abilities. The theory has been widely criticised as overgeneralising the ageing process, assuming it to be innate, universal, and unidirectional (Bengtson & Settersten, 2016). The theory is seen to perpetuates negative stereotypes about older adults as inevitably frail and of less value to society (Zhang & Lin, 2022). The theory also legitimises circumstances where older adults may be in situations where they have poor living circumstances, are socially isolated and have poor outcomes (Gergen, 1990; Gergen, 1992, Martin, 1988; Murphy, 2021). The merits of this proposition are that it brings attention to the psychological and social transitions that can accompany later life, including shifts in identity and the need to recalibrate one's priorities.

Continuity Theory

Proposed by Atchley (1989), Continuity Theory presents a more dynamic and individualised account of ageing than earlier structural-functionalist faming and aligns with contemporary understandings that highlight the heterogeneity and adaptability of ageing experiences (Settersten & Gannon, 2007). The theory posits that individuals adapt to ageing by maintaining continuity in their internal structures (such as beliefs, personality, and identity) and external structures (such as social

roles, relationships, and environments). The theory suggests that older adults strive to preserve familiar patterns of thought and behaviour over time, using these as adaptive strategies to manage age-related transitions. Consequently, older adults are more likely to selectively maintain familiar habits, routines, and social relationships that support a sense of stability and personal continuity. The Theory emphasises the role of individual agency in navigating the ageing process, proposing that maintaining consistency in behaviours and self-perceptions contributes to psychological wellbeing, identity preservation, and resilience amid life transitions (Atchley, 1999). The theory suggests that even during significant life transitions, such as moving between different forms of care or changing living arrangements, older adults strive to preserve core aspects of their identity and routines. The theory holds that adaptation is most successful when changes are made in ways that align with the individual's past experiences and preferences. This means that the disruption of transitions can be mitigated if new environments allow for the continuation of familiar activities, social roles, or values in the adjustment process.

While Continuity Theory offers a more nuanced and person-centred approach to understanding ageing, it has also been subject to critical scrutiny. One key criticism is that the theory tends to overstate individual agency, implicitly assuming that all older adults possess the autonomy, stability, and material resources needed to sustain continuity in the face of ageing-related challenges (Moody & Sasser, 2017). The theory can also be seen to oversimplify ageing by suggesting that older adults primarily maintain established patterns and preferences, and in these reinforcing stereotypes of rigidity and resistance to change. Furthermore, it tends to underemphasise the impact of significant life disruptions, such as bereavement, chronic illness, or institutional transitions, which often require discontinuity, adaptation, and the reconfiguration of identity and daily routines (Gilleard & Higgs, 2002).

Activity Theory

Activity Theory emerged as a response to Disengagement Theory, challenging the notion that withdrawal from social roles in later life is both natural and beneficial. Unlike Continuity Theory, which emphasises internal consistency and the preservation of self through familiar patterns (Atchley, 1989), Activity Theory focuses on external engagement and the value of sustained participation in social, physical, and productive activities (Havighurst, 1961). It argues that successful ageing is achieved not through disengagement, but through the active replacement or continuation of meaningful roles following life transitions such as retirement. This emphasis on outward adaptation aligns with the broader functionalist paradigm, wherein role stability is viewed as essential to maintaining societal equilibrium (Powell, 2006). By encouraging older adults to maintain or replace social roles, Activity Theory reflects a belief in the importance of social integration and

community involvement as mechanisms for individual well-being and societal cohesion. The theory thus promotes a model of "healthy" ageing grounded in active adaptation, supporting the notion that ageing individuals contribute to and benefit from ongoing engagement within the social system. It suggests that older adults achieve higher levels of wellbeing by remaining active and socially involved, thereby offsetting the potential losses associated with ageing (Havighurst, 1961; Lemon et al., 1972). Activity Theory holds that ageing leads to more positive outcomes when adults become active and maintain social interactions (Loue & Sajatovic, 2008). Activity Theory suggests that when older adults engage in social, physical and recreational pursuits the ageing process slows down or is delayed and their QoL improves (Cooper, 2002; Havighurst, 1961; Lemon et al., 1972; Neugarten 1964; Neugarten, 1968). In this construct, social connections are viewed as vital to the QoL of older people through their promotion of emotional support and mental health. The theory also derives its underpinnings through evidence (explored further in Chapter 3) which highlights the health benefits of regular physical activity in managing chronic conditions, improving morbidity and wellbeing (Rejeski & Mihalko, 2001). Measurement of social engagement and participation is typically through the specific activities and interactions (e.g. attending events, engaging in hobbies or involvement in clubs) an individual has (Carrasco et al., 2024; Levasseur et al. 2022).

While Activity Theory posits that older adults can better adapt to ageing and society by engaging in behaviours that promote active participation, one of its main criticisms is that it overlooks the influence of personality, life circumstances, and external factors such as caregiving responsibilities or health limitations, which can restrict social and physical involvement (Pinquart & Sörensen, 2000). Furthermore, the theory's emphasis on the quantity of activity may overlook the quality or meaningfulness of engagement, potentially leading to superficial involvement rather than fulfilling experiences (Adams et al., 2011). Scholars have also questioned the assumption that social engagement universally benefits well-being, with some studies suggesting that not all forms of activity have a positive effect on life satisfaction (Adams et al., 2011). A key aspect of Activity Theory is the understanding that an individual's ability to engage with others and seek support is shaped by a range of preconditions, including the person's capacity to control environmental factors and personal circumstances (Schulz, 2006). Additionally, the theory's alignment of engagement with QoL implicitly places the responsibility for poorer life outcomes on older individuals who lack external social engagement, which may be an oversimplification of more complex socio-economic and health-related challenges (Waldron et al., 2021).

Social Capital Theory

While Activity Theory underscores the importance of sustained participation in meaningful roles and social engagement, it frames such engagement largely at the individual level. As ageing

research has progressed, increasing attention has been paid to the quality and structure of the social environment as a critical factor in either enabling or constraining meaningful engagement. This extends the premise of Activity Theory by highlighting not only the importance of social activity itself but also the underlying mechanisms at play. Social Capital theory suggests that environmental contexts, networks, relationships, trust, and norms of reciprocity that exist within a community (Putnam, 2000) enhance opportunities for active social engagement and participation. Conversely, where these don't exist, opportunities for participation are more restricted. Communities with strong social capital are seen to promote active participation, and shared responsibility (Bourdieu, 2011). Reciprocity, a core feature of Social Capital Theory, reinforces mutual support and social bonds (Coleman, 1988; Wills, 1985). For older adults, the opportunity to contribute meaningfully to others, (such as volunteering, or providing for grandchildren) is seen to foster a sense of belonging, reinforces personal value and self-worth, and strengthens social identity, while also promoting feelings of achievement and accomplishment (Gustafsson et al., 2017; Narushima et al., 2018). This sense of contribution is identified as being particularly empowering, as it promotes a feeling of purpose and belonging, further supporting positive mental and physical health outcomes (Coleman, 1988; Zunzunegui et al., 2003).

Communities with high levels of Social Capital are said to be characterised by strong social cohesion and inclusion, ensuring individuals, collectively feel a sense of security and belonging (Coleman, 1988). From a theoretical perspective, while social activity theory emphasises the psychological and health benefits of maintaining social engagement, social capital theory places its emphasis on the resources and support derived from social networks and how these are influenced by the environments in which individuals reside. Therefore, in the context of ageing, social capital theory highlights the importance of community safety, access to community services, and the availability of social spaces, which collectively facilitate social participation and engagement. These environmental factors are viewed as creating a supportive framework that enables older adults to remain socially active, thereby enhancing their overall well-being (Ouellet et al., 2024). Perceived support and a sense of safety are seen to act as psychological buffers, providing a sense of belonging and reassurance that individuals are not facing challenges alone (Lakey & Cohen, 2000).

Social Networks

A core element within social capital theory is the strength of social networks. Communities with strong social capital are said to be characterised by dense, well-connected networks which include but extend beyond the immediate family (Sánchez-Arrieta et al., 2021). Social capital is built on the idea that individuals and groups can rely on their social networks for support, information, and collaboration. While social networks describe the structure of relationships, social capital

emphasises the quality and utility of these relationships (Coleman, 1988). Social networks operate through both proximate and distant social bonds. Social capital is often measured by the extent of an individual's social networks and, as in activity theory, their participation in community activities (Altmann & Gray, 2008). While social capital and social networks are both about the social ties and relationships individuals form within their communities, social capital highlights the structural aspects of community support, while social networks tend to be individually based referring to a person's own set of relationships. In this, the focus is on the web of interactions that connect individuals, encompassing family, friends, colleagues, and acquaintances (Golden et al., 2009).

Strong social networks are said to function as a protective factor, offering both emotional and practical support. Conversely, a lack of social capital - manifested in weak or fragmented social networks - can lead to social isolation, reduced access to support, and poor outcomes (Berkman et al., 2000; Victor & Bowling, 2012). For older adults, social networks are suggested as being particularly important in shaping the ageing experience, as they provide not only companionship and a sense of belonging but also access to vital resources and support systems (Berkman et al., 2000; Burt, 2000). In the context of this study, access to such supports is said to facilitate ageing in place by enabling older individuals to maintain independence (Bowling, 1991).

Distinguishing Social Participation from Social Connectedness

As outlined in the previous section the exploration of social capital and social networks is fundamental to ageing research because these concepts highlight how engagement and connectivity contribute to older adults' well-being and resilience. Building on social capital and social network theory, notions of s*ocial participation* and s*ocial connectedness* underscore the dual nature of social engagement - both from a structural and experiential sense. Social capital theory emphasises the value of these connections in fostering support and resource exchange, while social network theory highlights the role of relational structures in shaping access to social and emotional well-being. By conceptualising social involvement across a continuum, this thesis seeks to assess the distinctive contribution of each as an influence on QoL in later adulthood.

Although often used interchangeably in the research literature, this thesis treats social participation and social connectedness, as distinct and separate concepts. This conflation in research (see Chapter 3) can lead to confusion in the measurement of each concept by researchers and results in a lack of clarity in understanding the nuanced ways in which each contributes to older adults' well-being and QoL (Carrasco et al., 2024; Lynch et al., 2023). Both concepts emphasise the importance of maintaining social ties in later life and share the common goal of supporting well-being. However, as described above social participation refers to observable, objective involvement in social activities, such as involvement with community groups, while social connectedness captures the subjective and

qualitative experience of these interactions, including emotional, motivation, and psychological involvement. This taxonomy conceptualises a continuum that distinguish levels of social involvement, across quantitative to qualitative domains. This conceptualisation highlights that not all social activities are equal, they vary in depth, purpose and psychological impact. This differentiation is crucial for evaluating the influence of social interactions on QoL for older adults and central to this thesis.

The conceptualisation of social participation and social connectedness as distinct yet interrelated constructs in older adulthood have been explored by several scholars. While Levasseur et al. (2022) introduced a taxonomy delineating levels of social participation, their work primarily addresses observable behaviours rather than the subjective dimensions of social connectedness. However, their framework provides a foundation for understanding how different levels of social involvement can influence QoL outcomes. Further research has expanded upon this distinction. For instance, Thompson and Thompson (2023) examined how the richness of social relationships, encompassing both the quantity and quality of interactions, correlates with QoL among community-dwelling older adults. Their findings underscore the importance of not only participating in social activities but also the depth of emotional and psychological engagement in these interactions.

Therefore, for the analysis in this thesis, social connectedness involves a qualitative layer to the structure of social relationships, focusing on the emotional depth and the personal significance of these connections. (Ryff and Keyes, 1995). Social connectedness centres on the emotional, psychological, and relational bonds individuals form with others, which foster a deep sense of belonging, acceptance, and emotional security (Hoffman et al., 2024; Bower, 2024). Meaningful social ties are also suggested as validating personal identity and reinforce an individual's sense of self-worth. It is suggested that as social roles shift with age (e.g. as a consequence of retirement) social connectedness helps maintain continuity in self-perception and purpose (Thoits, 2011). This emotional dimension of connectedness is equally thought to create a positive feedback loop, where heightened self-esteem and empathy promote trust and cooperation, further deepening social bonds (Seppala, 2014). The need to belong is a fundamental human motivation (Baumeister & Leary, 1995), thus strengthened relationships, reinforce a person's sense of inclusion and emotional resilience. Chou et al. (2006) also suggest that feeling embedded in meaningful relationships plays a central role in shaping perceived support and that emotional openness and trust in turn supports older adults to seek and accept support (see also Haslam et al., 2018).

Loneliness Vs Social Connectedness

The absence of social connectedness is seen to exhibit itself in loneliness. Both social connectedness and loneliness are deeply intertwined, being subjective experiences, and to some

extent both concepts exist along a continuum. While social connectedness reflects the positive presence of meaningful and satisfying social relationships, loneliness arises from a perceived deficiency in such relationships (Perlman & Peplau, 1981; Cacioppo & Patrick, 2008). Both concepts are influenced by individual expectations, emotional needs and societal norms (Hawkley & Cacioppo, 2010). Ang (2021) proposes a "Social Circles Framework," suggesting that loneliness and social connectedness are polar opposites along a continuum, with social connectedness serving as the alleviation of loneliness and vice versa. This perspective aligns with earlier work by Hawkley et al. (2005), who identified three domains of loneliness, intimate attachments, face-to-face relations, and social identity, and noted that these dimensions are correlated but separable, indicating a complex relationship between social connectedness and loneliness. Importantly, while social isolation or having few social contacts does not necessarily lead to loneliness, the absence of emotionally fulfilling relationships, a lack of perceived connectedness, often does (de Jong-Gierveld et al., 2016). This perspective highlights the role of cognitive appraisal in the experience of loneliness, challenging the assumption that simply increasing the number of social interactions will reduce loneliness or enhance social connectedness. Moreover, research suggests that the relationship between social connectedness and loneliness is bidirectional: prolonged loneliness can deplete the psychological resources needed to form or maintain relationships, thereby perpetuating further social withdrawal (Cacioppo & Hawkley, 2009).

Life Course Theory & Life Span Development Theory

The relationship between social capital, participation, and connectedness provides a foundation for understanding how individuals engage with their social environments in later life. However, to fully grasp the complexities of ageing, it is essential to consider the dynamic contribution and accumulation of experiences, social structures, and personal trajectories over time. Understanding ageing and QoL therefore requires theoretical frameworks that account for the complex, multifactorial, and dynamic nature of human development. Life Course Theory offer valuable insights into how individuals age, adapt, and experience wellbeing across different stages of life. Grounded in both sociological and psychological theoretical traditions, Life Course Theory conceptualises ageing as a lifelong, multifaceted process shaped by a series of developmental stages, life transitions, and broader socio-historical contexts (Elder, 1998; Novak, 2018; Smith, 2015). It extends beyond individual development to consider the cumulative impact of social, economic, cultural, and environmental factors across the lifespan. This approach builds upon, yet departs from, classical stage-based psychological theories such as Freud's psychosexual stages, Piaget's cognitive development model, and Erikson's (1959) psychosocial theory.

Life course approaches are rooted in the idea that ageing and development cannot be fully understood without considering the temporal, structural, and cultural context in which individuals live (Elder, 1998; Marshall & Bengtson, 2011). Within Life Course Theory, ageing is conceptualised as a dynamic and continuous process characterised by a series of interrelated transitions which effectively influence life quality in both positive and negative ways. Transitions, or life events, include withdrawal from the labour market, loss of a spouse, as well as shifts in social networks and roles (Deeg et al., 2018). Physical ageing equally brings transitions in functional health, such as declines in mobility, sensory acuity, or the onset of chronic illness, which may in turn necessitate adaptations in living arrangements, such as downsizing or moving closer to family members for support. Cognitive transitions, including changes in memory, attention, or executive function, may also emerge, influencing autonomy and everyday decision-making. In parallel, many older adults experience transitions in their patterns of caregiving and care-receiving, often moving from reliance on informal support systems, such as family and friends, to more formalised care arrangements (Deeg et al., 2018). These transitions, while often normative, require ongoing adaptation and can have profound effects on an individual's sense of competence, connectedness and subjective wellbeing.

Cumulative (Dis)Advantage and Life Course Influences on Quality of Life

A core tenet of life course theory is the principle of cumulative advantage and disadvantage. Early life experiences such as education, childhood health, family stability, and socioeconomic status exert a lasting influence on later life outcomes, including physical health, psychosocial wellbeing and overall QoL (Berkman et al., 2011; Marshall & Bengtson, 2011; Stowe & Cooney, 2015). For instance, individuals who experience poverty or social marginalisation in early life are more likely to face poor health outcomes, reduced functional capacity, and limited access to supportive resources in old age (Wolfson, 2016). Furthermore, the timing and sequencing of key life events such as marriage parenthood, career transitions, bereavement, or retirement are viewed as critical to shaping life trajectories. These transitions, depending on when and how they occur, can have profoundly different effects on individual pathways and their ultimate QoL at older ages (Heikkinen, 2023). Life course theory also recognises the role of individual agency, whereby people make choices about careers, relationships, and health behaviours that influence their own developmental pathways. However, these choices are often made within constrained social structures, highlighting the interaction between personal autonomy and environmental contexts (Elder, 1998). Macrosocial factors such as economic policy, generational shifts, technological changes, and healthcare access are seen to shape the lived experiences of different cohorts. For example, older adults who have lived through war may exhibit different health and QoL trajectories compared to younger cohorts (Berkman et al., 2011; Levy, 2015). Moreover, socio-epidemiological research highlights how lifelong

exposure to social risk factors, such as perinatal stress, malnutrition, or discrimination can influence ageing outcomes and exacerbate disparities in late-life (Berkman et al., 2011).

Lifespan Development Theory (LDT)

Building on the foundational principles of life course theory, Lifespan Development Theory (LDT) (Baltes, 1987; Baltes et al., 2006) provides a more granular account of intraindividual development[4] across life stages. While the life course perspective foregrounds the cumulative and structural influences that shape trajectories over time, LDT focuses more closely on the dynamic processes of change within individuals. Crucially, it seeks to bridge psychological and sociological understandings by acknowledging that development is not only socially patterned but also biologically and cognitively mediated. In doing so, LDT highlights how individual outcomes, such as wellbeing or perceived QoL, result from a continuous interplay between personal resources, life experiences and environmental contexts.

This integrative perspective supports a multidimensional understanding of ageing, one that considers both the cumulative impact of life events and transitions, as well as the potential for adaptation, growth, and resilience across the life span. Thus, while life course theory provides a framework for understanding structural pathways and cohort effects, LDT offers a complementary lens through which to examine the psychological mechanisms and maintains the idea of flexibility and adaption that contribute to a positive QoL.

The theory is grounded in several key principles:

Lifelong: Occurs from birth to death; no single life stage is inherently more important than another.

Multidimensional: Encompasses interrelated domains — biological, cognitive, emotional, and social.

Multidirectional: Individuals experience both growth and decline across different capacities and life stages.

Plasticity: Human functioning remains malleable; people can adapt to change and learn new strategies at any age.

Contextual: Is shaped by age-related, historical, and non-normative events and environments.

Multidisciplinary: Integrates insights from psychology, sociology, anthropology, neuroscience, and public health.

Historically Embedded: Is influenced by the broader sociocultural and historical conditions in which one lives (Baltes et al., 2006). These principles reflect the dynamic interaction between individual capacities and the surrounding environmental context. In the context of this research, this interplay

[4] Intraindividual development focuses on how an individual develops across different domains, such as cognition, emotion, personality, physical health, and behaviour throughout the life span.

is particularly relevant to exploring the relationships between living arrangements, experiences of loneliness, and perceived QoL. LDT provides a framework for understanding how these factors jointly influence wellbeing by recognising that QoL encompasses a range of dimensions, including physical health, psychological wellbeing, autonomy, social relationships, environmental conditions, and spiritual meaning (Nakamura et al., 2022; Pequeno et al., 2020; Zhong et al., 2023). While LDT acknowledges that biological ageing may involve certain declines in function, it also emphasises the enduring potential for psychological adaptation, meaning making, and the re-evaluation of personal goals in later life.

Theoretical Constructs Supporting Psychological Mechanisms of Quality of Life in Older Adulthood

Building out from LDT, the Selective Optimization with Compensation (SOC) model seeks to understand the agentic[5] strategies through which older adults seek to maintain psychological wellbeing, autonomy, and life satisfaction in the context of ageing (Baltes & Baltes, 1990; Freund & Baltes, 2002). The model highlights developmental regulation through three interrelated processes: 1) Selection, involving a narrowing of one's goals to those most meaningful and realistically attainable. 2) Optimisation, the enhancement of resources to achieve those goals; and 3) Compensation, which entails adopting alternative strategies or supports to maintain functioning when faced with limitations. Through these processes older adults are seen to maintain control over their lives by selecting achievable goals, optimising resources to meet those goals, and compensating for losses through adaptive strategies. Carstensen et al. (1999), similarly suggests a narrowing and reprioritisation in motivational priorities as individuals age, with older people increasingly valuing emotionally meaningful goals, such as close interpersonal relationships and present-focused experiences. This age-related recalibration is suggested to support selective engagement in emotionally rewarding experiences, contributing to psychological resilience and satisfaction. Rather than emphasing autonomy or long-term goals, older adults are seen to increasingly value emotional security, intimate relationships and social support, prioritising closeness and stability over independence. Consequently, emotional wellbeing confirmed both by theory and empirical findings improves with age (Carstensen et al, 2011; Isaacowitz, 2005; Klusmann et al., 2021; Monteiro et al. 2024). In terms of social engagement, this shift in focus suggests that older adults come to prioritise fewer, more meaningful relationships, favouring close ties with partners or family over broader networks or more independent living arrangements.

[5] Agentic refers to the capacity of individuals to act independently, make choices, and exert control over their own actions and life circumstances.

Expanding on this notion of motivational recalibration the Strength and Vulnerability Integration (SAVI) model offers a holistic perspective by identifying the conditions under which older adults' emotional strengths are most effective (Charles, 2010). Charles (2010) suggests that older adults develop enhanced emotion regulation abilities through accumulated life experience, cognitive reappraisal and a tendency to avoid negative stimuli and stress (including social avoidance). This tendency is described as a "positivity bias", which refers to the preference for, and prioritisation of positive over negative experiences and information. Within this framework, this positive bias is seen as an adaptive strength that supports emotional regulation, helping older adults maintain affective well-being by focusing attention on uplifting experiences and disengaging from emotionally taxing situations. Charles also suggests that these emotional strengths are not limitless. Under conditions of sustained stress or high arousal, older adults may be more physiologically vulnerable, which can compromise emotional well-being. Several writers have suggested that this positive disposition may equally mask underlying vulnerabilities (Estes, 2001). Emotional avoidance may also obscure experiences of loneliness or hinder the recognition and diagnosis of psychological distress, such as depression or anxiety, as older adults internalise stress or withdraw from expressing dissatisfaction (Jivraj et al., 2014).

Deci and Ryan (1985) in their Self-Determination Theory (SDT) propose that a positive QoL is grounded in three fundamental psychological needs: autonomy, competence, and relatedness. While elements of relatedness have been largely traversed in this chapter, the theory suggests that preserving autonomy within relationships, or one's living circumstances, is equally essential for psychological well-being, as it reflects an individual's ability to make life choices that align with their personal values. Competence refers to a sense of effectiveness in meeting daily challenges, it involves an individual's perception of their ability to master tasks and learn new skills. Competence is closely tied to self-efficacy (Bandura, 1997), but SDT uniquely emphasises that this sense of competence must be experienced in a context of autonomy to contribute meaningfully to wellbeing (Ryan & Deci, 2001). The authors suggest that when individuals perceive that others value and support them, it fosters a sense of safety and emotional security, which in turn supports greater psychological resilience and motivation (Ryan & Deci, 2000). SDT suggests that cultural norms and values influence how pleasure is experienced and expressed. For example, collectivist cultures emphasise pleasure derived from social harmony and relationships, while individualist cultures may focus on personal achievements. Ryff (1989) (Psychological Well-Being Model (PWB)) extends SDT by offering a multidimensional account of wellbeing. Involving six dimensions of well-being: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. This theory equally promotes autonomy and relations with others as central tenets.

The notion of environmental mastery aligns with adaptive strategies described in the SOC and SST frameworks, highlighting the importance of older adults navigating their environments, effectively leveraging resources and opportunities to maintain functioning and wellbeing. The dimension of purpose in life, emphasises the importance of goal orientation and meaning making, which are central to both LDT and SDT. This element underscores how older adults derive satisfaction and fulfilment from pursuing meaningful activities and relationships, even as they adapt to the transitions of later life. Finally, the model introduces and strengthens existential and developmental aspects associated with flourishing through its acknowledgement of purpose and personal growth.

Conclusion

The chapter opened by examining what are often referred to as grand theories of ageing, originating from early Functionalist paradigms within ageing research. These foundational perspectives sought overarching explanations of the ageing process but have been criticised for their rigid oversimplification and tendency to overgeneralise and marginalise the experience of ageing across diverse populations (Powell, 2022). Such approaches fail to reflect the nuanced and multifaceted nature of ageing in contemporary societies. In response, it is argued that effective theoretical frameworks must embrace the variability between individuals and groups, while also attending to the social, cultural, and structural contexts that shape ageing trajectories. Rather than viewing ageing as a uniform or static process, contemporary perspectives emphasise it as a deeply personal, socially embedded, and continuously evolving experience. Theories that aim to meaningfully understand and support ageing must therefore engage with the complexity of human development and the growing diversity of older populations.

On the basis of these insights the chapter then shifted to an exploration of three interrelated theoretical dimensions in order to enhance understanding of the drivers of life quality (QoL) in later life, with a view to shed light on the mechanisms most relevant to this study. At a structural level life course theories emphasised the cumulative influence of life events, transitions, and structural conditions across time. The exploration of Activity and Social Capital theories highlighted the significance of social participation, engagement, and community networks in fostering wellbeing. While an exploration of psychological theories focused on the internal resources and adaptive processes that support older adults in managing challenges and sustaining a sense of wellbeing. Collectively, these frameworks provide a multidimensional integrated perspective for examining how individual, social, and structural factors interact to shape QoL in ageing populations.

Together, these theories promote a more integrated understanding of ageing that moves beyond deterministic models or approaches. They support the idea that QoL in later life is influenced by both structural conditions and individual capacities, shaped by the timing and sequence of life

events, and mediated by ongoing psychological and social adaptation. Importantly, they challenge overly simplistic or universal approaches to ageing by acknowledging the variability of individual trajectories, the importance of life context, and the enduring potential for growth and redefinition in older adulthood.

Chapter 3： Literature Review

Chapter One of this thesis underscored the significance of quality of life (QoL) as a central goal and crucial indicator of well-being among older adults. Chapter Two provided a series of theoretical frameworks to guide ageing responses, policy, and research. It underscored the contributions of social capital theory and social activity theory in understanding the protective factors that influence older adults' well-being throughout their lives but also underscored the importance of psychological processes which contribute to adjustment and a positive outcome as individuals age.

This chapter extends these concepts by examining research findings and the current state of the literature into the factors that are known to contribute to QoL in older adults, with a particular focus on living arrangements. It also provides the empirical basis to which social capital, connectedness and participation in social activities, including work, have been found to mitigate the potential negative effects of ageing, and in particular the risks of loneliness among those living independently. This exploration includes an analysis of the underlying moderating factors which may be operating and what is understood about their influence on life satisfaction and QoL.

In conducting this literature review, I have focused on assessments from studies involving meta-synthesis, particularly in relation to the extensive research base in public health and medical literature. Analysis has also relied heavily, where available, on those studies which have been undertaken using large scale and longitudinal data to better understand the temporal dynamics and causal pathways underlying observed associations.

Quality of Life: A Multidimensional Approach

Quality of Life is discussed in various fields ranging from welfare, economics, international development, healthcare and psychology, yet its measurement continues to be illusive and somewhat controversial (Chowdhury et al., 2021; Müller et al., 2021; Skevington et al., 2004). The term can refer to different constructs depending on the context to which it is being applied. Common approaches to understanding QoL include: i) Health-related approaches (Park et al. 2023); ii) measures of economic and material well-being (Rojo-Pérez, 2021); iii) social wellbeing (Marzo, et al., 2023); iv) psychological well-being (Nakamura et al., 2022); or through v) integrated approaches that attempt to combine multiple dimensions (Sirgy, 2012). Each approach has benefits and limitations.

The World Health Organisation (WHO), a major influencer in QoL research, define QoL as "… an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHOQOL Group, 1995). This definition emphasises subjectivity in the measurement of the concept, the influence of culture and value settings, and the extent to which aspirations can be achieved. Critics of this approach argue that in addition to subjective measures, QoL must involve objective measures

including broader social, economic and environmental factors that significantly impact QoL (Karimi & Brazier, 2016). They suggest that attempts to measure QoL often mistakenly focuses on health status rather than "true QoL". Another concern with the WHO definition is that it is embedded within the cultural and value systems associated within which the individual is located. This "relativistic approach"[6] suggests that these systems define the parameters for measuring QoL. For example, in a highly patriarchal culture, there would be an acceptance of the subordinate place of women in relation to men. Similarly, the definition builds on a hierarchical view of life quality, where individuals compare their social ranking within the context of their communities.

While definitions and the measurement of QoL will be further refined in a subsequent chapter, for the purposes of this thesis "quality of life" is taken as a broad, multidimensional concept that includes subjective assessments of both positive and negative aspects of life. It encompasses physical health, emotional and psychological state, levels of independence, social relationships, personal beliefs and their relationships to salient features of the environment (Nakamura et al., 2022; Pequeno et al., 2020; Zhong et al., 2023).

Factors Influencing the Quality of Life of Older Adults

The broad base of theoretical and measurement approaches described in Chapter 2, suggest a range of interconnected factors influence one's physical, emotional, psychological and social well-being. They include both structural level causes and individual level causes associated with health and disability, economic factors, environmental and socio-spatial factors and social capital considerations including: the strength of social networks, relationships and resulting levels of connectedness and support, psychological wellbeing, and the impact of life shocks or transitions (Iwano et al., 2022; Ouden et al. 2021).

Within these structural influences, a range of authors have suggested that it is critical to focus on the socio-spatial context within which older people reside and that both home and community context are important in influencing older people's sense of satisfaction, happiness and QoL (Barresi et al., 1984; Hillcoat-Neallèamby & Ogg, 2014). Safe and supportive environments have been identified as crucial enablers for older adults, facilitating independent living, social interaction, and community engagement (Benzar, 2024; Bigonnesse & Chaudhury, 2021; Howden-Chapman et al., 2021) Neighbourhoods designed to foster and integrate social capital (discussed in Chapter 2) through urban design can encourage social interaction and community engagement, thereby

[6] A relativistic approach in the context of Quality of Life (QoL) suggests that the criteria for measuring QoL are not fixed or universal but instead depend on the specific systems, cultures, or contexts in which individuals live. This means that different societies, communities, or even individuals may define and assess QoL based on their own values, priorities, and lived experiences rather than adhering to a single, objective standard.

mitigating feelings of loneliness and isolation and enhancing mental health and overall well-being. These researchers suggest that there is an interplay between living arrangements, housing conditions and environmental factors, with each playing a key role in mitigating the potential negative impacts of ageing. In this context these negative impacts include reduced wellbeing, psychological distress, increased risks of morbidity and mortality (Holt-Lunstad et al., 2015). It is also suggested that dissatisfaction with one's housing circumstances and poor access to local facilities become increasingly important the older we become (de Jong et al., 2012; Hillcoat-Neallètamby & Ogg, 2014).

Living arrangements

At the heart of this thesis is understanding the extent to which living arrangements of older individuals influences their well-being. Whether living independently, with family, in assisted living, or in institutionalised care, these environments are suggested to shape the lives of older adults, including physical, emotional, social, and psychological health (Velkoff & Kinsella, 2000). Living arrangements not only involve physical space and accessibility but also influence levels of social interaction, autonomy, and access to support (Rodriguez-Blazquez et al., 2018; Velkoff & Kinsella, 2000). Within these considerations the choice and quality of living environment is suggested to directly influence an older adult's autonomy, social interaction, and access to services, thereby shaping their overall well-being and life satisfaction (Wiles et al., 2012).

Independent Living Arrangements

Some theorists argue that as older peoples' feelings for their home and neighbourhood mature with time, they construct meaning and memorable experiences with their existing living arrangements (Burholt, 2006; Hillcoat-Neallètamby & Ogg, 2014). In these arrangements older adults are said to adjust to their changing physical and cognitive abilities becoming increasingly attached to where they live. Consequently, older adults are said to evaluate their residential contexts positively (Bonaiuto, 2004). Continuing to reside in such contexts is suggested to provide a sense of competence in going about daily activity and routines (Lawton & Nahemow, 1973). Attachment to place encompasses social, environmental, functional, emotional, and psychological meaning (Butcher & Breheny, 2016).

Substantial empirical evidence supports this finding. Pinquart and Sörensen (2000), in a meta-analysis of 286 empirical studies, found that maintaining independence in old age, where assistance from others was not required, was strongly associated with higher life satisfaction and emotional well-being. The synthesis highlighted those meaningful relationships, whether with family or friends, substantially enhance the QoL for individuals living independently. Additionally, their synthesis revealed that competence in managing one's own life was linked to greater self-esteem and

life satisfaction. Lichtenstein et al. (2003) equally found that older adults who live independently reported higher levels of happiness and life satisfaction compared to those in institutionalised settings. Independent living was found to be associated with positive outcomes in terms of psychological health, including lower levels of depression and anxiety. A key limitation in many of these studies, particularly in the context of this thesis, is that they often use the experiences of older adults in aged care facilities as the primary counterfactual to living independently. This comparison overlooks the diverse living arrangements (such as living with one's family) typically pursued outside of aged care.

However, independent living is also problematic. Lim et al. (2023) have identified a significant association between relationship status and the risk of episodic loneliness. Their study found that individuals who were single, divorced, separated, or widowed faced a 71% higher risk of experiencing episodic loneliness[7] compared to those who were married or partnered. This finding highlights the critical role that intimate partnerships play in mitigating loneliness, and the risk of loneliness for those living independently. The presence of a partner is seen as providing consistent emotional support and social interaction, both of which are seen as protective factors against the onset of loneliness (Cacioppo & Patrick, 2008; Lim et al., 2023). Likewise, Lim et al., (2020) in examining a range of correlates and risk factors that contribute to the experience of loneliness note that age, gender, marital status, and socio-economic position all play important roles in determining an individual's vulnerability to loneliness. For instance, older adults, particularly those who are widowed or live alone, were found to be at higher risk of experiencing chronic loneliness[8].

In a similar vein, Vanleerberghe et al. (2017) in their literature review emphasised the importance of strong social networks and active community involvement for the well-being of older adults living independently. They suggested that a lack of social engagement could lead to social isolation, which negatively impacts both mental and physical health. Pinquart and Sörensen (2000) equally warn that when older adults require external support, as a consequence of disability or ill health, the situation becomes more complex, with the quality of care being a key determinant in QoL. High-quality support characterised by "warmth and compassion" was seen as mitigating the negative effects of dependency and social isolation. Even in cases of dependency, maintaining meaningful social interactions and relationships was identified as enhancing subjective well-being. Where these conditions are not present research findings indicate that living alone and experiencing social isolation or loneliness can negatively impact the physical and mental health of older adults,

[7] "Episodic loneliness" is a temporary emotional experience of isolation, triggered by specific events or situational factors (Hawkley & Cacioppo, 2010).

[8] "Chronic loneliness" is a persistent, long-term feeling of isolation that negatively impacts physical, emotional, and psychological well-being (Cacioppo & Patrick, 2008).

leading to conditions such as depression, cognitive decline, physical morbidity and greater likelihood of premature mortality (Cacioppo et al., 2015; Gilmour 2012; Victor & Bowling, 2012). Some researchers have found that age, particularly for those aged over 80, has a significant influence on these factors and that older adults are considerably more prone to experiences of loneliness and have a greater desire to change their living arrangements (Angelini & Laferrère, 2012).

In an assessment by Jamieson et al. (2018) (using the interRai-HC[9]), of the living arrangements for older adults aged 65+ in New Zealand, those living alone were found to be two times more likely to report that they were lonely (29%) compared with those living with others (14%). Additionally, Blakely et al. (2015) have found that older individuals living alone in New Zealand were more likely to experience unmet health care needs, which negatively impacted their overall QoL. Victor and Bowling, (2012) found similar concerns, among older adults in Great Britain, but added to these decreased levels of access to social supports, and increased vulnerability to physical decline and accidents. Similarly, findings from the English Longitudinal Study of Ageing (ELSA) indicated that older adults who lived alone had poorer physical health outcomes and were more likely to experience limitations in their daily activities (Doran et al., 2011).

Jamieson et al.'s (2018) New Zealand study equally found that Asian older adults had the highest loneliness rates, across all ethnic groups even though most lived with others. Similar findings were observed in Canada among older Chinese immigrants, even for those living with family (discussed below). Researchers attribute this to language barriers, cultural differences, and limited social networks outside the immediate family - factors linked to greater social isolation and higher rates of loneliness (Lai et al., 2020; Syed et al, 2017). An additional explanation, though not extensively explored in the literature, may involve the impact of structural and interpersonal racism experienced by these communities, compounded by the lack of culturally appropriate social networks and support services. These intersecting factors may further compound feelings of exclusion, isolation, and heightened loneliness among older adults from minority ethnic backgrounds (Koehn et al., 2022; Wright-St Clair & Nayar, 2020).

A key concern for many older adults living independently is financial stability. Economic hardship can greatly limit an individual's ability to engage in social activities, such as affording

[9] In New Zealand, the Needs Assessment and Service Coordination (NASC) process determines eligibility for home care assistance based on an individual's level of need. The assessment via the interRAI assessment tool considers mobility, ability to perform daily tasks, and cognitive health; chronic illnesses, disabilities, and age-related health concerns; social and environmental factors including living arrangements, availability of family support, and access to community resources; safety and risk; ability to manage daily activities, including challenges in personal care, meal preparation, and household maintenance. Resultant support includes: Personal care (e.g., showering, dressing, medication assistance); Household support (e.g., cleaning, meal preparation); Carer support (for family members providing care); Mobility equipment and home modifications.

transportation or basic necessities, thereby reducing social participation. This can result in social exclusion and isolation, contributing to higher levels of loneliness and poorer overall well-being (Pinquart & Sörensen, 2000; Batsleer & Duggan, 2020; Tapia-Muñoz et al. 2022; Victor & Bowling, 2012). This phenomenon has been found to be particularly prevalent where there are high levels of economic inequity, suggesting that in these societies loneliness also derives through social exclusion and alienation (Tapia-Muñoz et al. 2022). Furthermore, economic disparities often correlate with poorer health outcomes, which may further contribute to social isolation and loneliness, creating a cycle of disadvantage. The absence of financial resources has been found to be particularly prominent in its impact on QoL outcomes where individuals are living independently or alone (Batsleer & Duggan, 2020). Conversely, in their meta-synthesis of the literature, Pinquart and Sörensen's (2000) found that financial independence and stability are closely linked to older adults' ability to live independently, with those from higher socio-economic backgrounds benefiting the most. Financial insecurity, on the other hand, was seen to limit access to essential healthcare, nutritious food, and safe housing, which was seen as exacerbating both physical and mental health issues, ultimately diminishing QoL.

The research canvassed above highlights a paradox in the living arrangements of older adults: while independent living can foster a sense of attachment, autonomy, and life satisfaction, it also poses significant risks for loneliness and social isolation, particularly for those without a partner or in financial hardship. On one hand, studies show that maintaining independence and strong social connections enhances well-being (Pinquart & Sörensen, 2000; Lichtenstein et al., 2003), yet on the other, living alone, especially for widowed or single older adults, can increase the likelihood of loneliness, depression, and poor health outcomes (Cacioppo et al., 2015; Gilmour, 2012). And furthermore, see a reduction in access to critical services such as health-related services.

Living with Family

The evidence indicates living with family members can serve as a protective factor against these negative effects of loneliness and social isolation. Family members provide emotional and practical support, fostering a sense of connectedness (Jiao et al., 2024; Pinquart & Sörensen, 2000). These arrangements may also provide older adults with increased access to care, helping them navigate the challenges of ageing, such as declining physical health or cognitive function (Butcher & Breheny, 2016). Additionally, living with family can enhance a sense of competence and autonomy, as older adults contribute to daily routines and engage in shared family responsibilities, which can promote overall well-being (Lawton, 1988). Research by Litwak and Longino (1987) found that older adults living with other family members often reported higher levels of life satisfaction and greater levels of social support compared to those living alone. Furthermore, the presence of family

members is suggested to provide greater emotional security, assistance with daily tasks, and increased opportunities for social interaction, all of which are critical for QoL (Carbo, 2023). Basu et al. (2022) equally found in the US Health and Retirement Study, that older adults living with family or in a communal setting reported higher emotional wellbeing and life satisfaction compared with those living alone. Monteiro et al. (2024) have equally found that involvement in family activities such as caregiving for grandchildren and participating in family gatherings were likely to be associated with a stronger sense of belonging and purpose among older adults and that these interactions mitigated feelings of loneliness. These factors may differ however across different groups. Turunen (2013) suggests that living with one's family tends to have a more positive impact for women, as compared with men, and for certain cultural and ethnic groups.

Family co-residence also has the capacity to maintain important cultural practices, with older family members reinforcing cultural norms, values and traditions. In the New Zealand context some authors argue that many Māori, Pacific and Asian families may perceive a loss of "mana" if they cannot care for older family members. In the case of Kaumātua (older Māori) they suggest that aged care is seen as culturally foreign and introducing distance from whānau (family), with a preference for maintaining connections and control over their environment (Moore et al., 2024). A study by Muru-Lanning (2017) highlighted how Māori families often rely on a combination of formal and informal care, integrating health and social services with traditional family support. The study suggests that older adults in these family contexts receive comprehensive care that respects cultural practices and values.

Moving in with family members can equally enhance mental well-being and life satisfaction of older adults, as evidenced by studies such as those by Parra-Rizo et al. (2020) and Pillemer et al. (2013). However, there are potential downsides to living with one's family, particularly when caregiving roles are imbalanced or there is insufficient external support of the family caring for an older member. For instance, Schulz and Sherwood (2008) found that family caregivers often experienced significant emotional and physical strain, and in some cases lead to burnout which negatively affected family functioning and both the caregiver's and the older adult's QoL (Pinquart & Sörensen, 2000). Similarly, research by McDonald et al. (2017) found that family caregivers in New Zealand often experience emotional and physical stress as they attempted to balance caregiving with other responsibilities, such as employment and managing their own health. Equally, it has been found that many family caregivers, particularly among Māori, Pacific and Asian communities, lack access to support, resources and information about how to safely care for their elders and that it is particularly difficult for these groups to access services such as dementia, respite or residential beds (Moore et al., 2024).

Potential downsides for the older person themselves are suggested to include the loss of independence and autonomy, as older adults need to adapt to family routines and decision-making processes (Bonaiuto et al., 2003). Additionally, intergenerational conflicts or a lack of privacy within the household can lead to stress and dissatisfaction, particularly in cases where the older adult feels that they are imposing on family members (Urick et al. 2017). Lastly, while family members offer support, the absence of social networks outside the home can limit opportunities for engagement with the broader community, which is also crucial for maintaining social connectedness and overall life satisfaction (Lai et al., 2020; Syed et al., 2017; Vanleerberghe et al., 2017).

Furthermore, the rise in the number of older adults living in the community with multiple chronic conditions (for instance dementia, or diabetes) has shifted the nature of care from physical assistance with daily activities to more complex medical care. For many families, especially in rural areas, this may require a combination of informal care at home and formal health services, which can create logistical challenges or impose heavily on wider family functioning (Lilburn, 2016; Ouellet, Ouellet, & Tinetti, 2024).

Living with a Partner

Cohabiting with a partner is generally associated with a higher QoL compared to other living arrangements. Living with a partner typically provides ongoing emotional, social, and instrumental support, which contributes positively to psychological well-being, physical health, and life satisfaction (Brown et al., 2016; Dykstra & Fokkema, 2012). Older adults in partnered relationships often report lower levels of loneliness and depression due to the presence of companionship, shared routines, and emotional intimacy (Umberson & Montez, 2010). This form of social connectedness can act as a protective factor against the adverse effects of ageing, including social isolation and functional decline. Furthermore, the presence of a partner has been linked to better physical and cognitive outcomes, and consequently at a lower risk of developing dementia, possibly due to the social engagement and mental stimulation afforded by these partnerships (Fratiglioni et al., 2000). Equally, older adults who live with a partner are more likely to engage in health-promoting behaviours, receive assistance with daily tasks, and experience fewer limitations in their daily living (Freedman et al., 2012).

However, while partnered living is generally advantageous, it can also involve challenges, particularly when one partner experiences chronic illness, frailty, or cognitive decline. In such cases, the role of caregiving often falls disproportionately on the healthy partner, which can lead to increased physical and emotional burden. This caregiving role may generate stress, fatigue, and a sense of role reversal or loss of mutual support, ultimately diminishing the QoL for the caregiving partner (Pinquart & Sörensen, 2007). Research indicates that caregiving demands on a partner often

restrict social engagement, contributing to heightened loneliness and diminished well-being, which subsequently impact life outcomes after the loss of a spouse (Murray, 2014).

Life Shocks and Transitions

For older adults, life shocks, such as the loss of a spouse or close family member, are found to lead to intense grief, depression, and loneliness, significantly diminishing psychological well-being (Schnittker, 2007). Moreover, traumatic events such as a sudden disability or financial crisis have been found to lead to long-term mental health issues, exacerbating feelings of helplessness and despair among older adults (Grundy & Sloggett, 2003). Such emotional upheavals can severely disrupt daily functioning, leading to a decline in QoL as older adults struggle to adapt to new and challenging circumstances. These life shocks have often been found to lead to the loss of social networks, increased isolation, loneliness, and a resultant loss of emotional support, all of which contribute to a decline in mental health (Cacioppo & Cacioppo, 2014; Holt-Lunstad, et al. 2015). According to Shulz and Beach (1999), such disruptions can initiate a cascade of negative psychological processes, including heightened stress and diminished coping resources, further exacerbating poor mental health outcomes. Hung et al. (2021) found that older adults who lose a partner report lower life satisfaction and higher depressive symptoms. Additionally, Weden et al. (2018) demonstrated that spousal loss increases poor health outcomes, highlighting the crucial support partners provide. The loss of social networks and reduced access to support through reductions in mobility and disability have also been shown to hinder older adult's ability to cope with life stressors (Perissinotto & Covinsky, 2014).

These events described in the preceding paragraph, may also trigger fundamental changes in living and care arrangements, which can compound the stress and readjustment required. Transitions such as moving into supported accommodation, increased reliance on caregivers, or changes in household composition can disrupt an individual's sense of autonomy, identity, and routine, amplifying feelings of vulnerability and loss (Pearlin et al., 2005; Sixsmith et al., 2014). Moreover, such disruptions may reduce access to familiar social networks, further affecting psychological wellbeing and perceptions of control (Wiles et al., 2012).

Gendered and Age Experiences

Gendered experiences of ageing significantly influence the psychological and social outcomes associated with life transitions. Women, who tend to live longer than men, are more likely to experience widowhood and its associated emotional and practical consequences (Hung et al., 2021). This can result in increased social isolation, reduced financial resources, and heightened risk of depression (Schnittker, 2007). Despite this, women often demonstrate stronger informal social networks and coping strategies, which can partially mitigate the negative psychological effects of

ageing (Antonucci et al., 2009). Men, on the other hand, are more likely to rely heavily on their spouses for emotional support and daily functioning (Gurung et al., 2003). As such, the loss of a partner may have a more pronounced effect on men's psychological well-being, as they often face greater difficulty rebuilding social connections and managing household responsibilities (Wenger, 2001). Consequently, older men may be particularly vulnerable to declines in QoL following bereavement or health shocks.

Age, as an independent factor, also compounds these gender differences. The "oldest-old" (typically those aged 85 and over) are more likely to experience compounded effects of health-related decline, disability, and social withdrawal. Cognitive and physical impairments which typically increase with age, can limit autonomy and social participation, key components of QoL (Cosco et al., 2014; Rudnicka et al., 2020). Furthermore, older adults experiencing health comorbidities often have fewer coping resources and may have diminished access to supportive environments (Perissinotto & Covinsky, 2014). Importantly, gendered ageing trajectories intersect with structural inequalities. For example, older women often face cumulative disadvantages from lower lifetime earnings, informal caregiving roles, and longer life expectancy, placing them at greater risk of financial insecurity and inadequate care in old age (Hillcoat-Nallétamby & Ogg, 2014).

Health, Disability and Life Quality

The process of ageing can be considered from three discrete but related perspectives: physical ageing, psychological ageing (commonly measured in terms of cognitive ability), and social ageing (participation in community activities) (Cosco et al., 2013; Cosco et al., 2014; Perales et al., 2014). Although the overall performance of these areas gradually declines as people age (Halvorsrud & Kalfoss, 2007), improving physical, psychological and social dimensions of ageing are seen as essential for promoting a better QoL, enhancing independence and reducing healthcare burdens (Rudnicka et al., 2020).

Adding to the arguments put forward in Chapter One regarding the importance of a focus on QoL in older adults, a synthesis of the research discussed here suggests that a positive QoL is a critical protective factor in health outcomes for older adults. This synthesis suggests that QoL and its relationship with health are complex and multifaceted. While declining health, cognitive function, or disability as a consequence of the ageing process can lead to a deterioration in an individual's QoL (Memisevic & Ibralic, 2024), a poor QoL can equally influence health outcomes, including increased morbidity, disability, premature mortality, chronic illnesses, functional limitations, and greater frailty (Adelantado-Renau et al., 2023; Choi et al., 2017; Moreno-Agostino et al., 2022; Moussavi et al., 2007; Posadzki et al., 2020; Steptoe & Fancourt, 2020). A weakness in many of these studies is that they are cross-sectional in nature, and the relationships identified are associative rather than causal

(Ouellet et al., 2024). Roy et al. (2023) explore the relationship between social engagement and health outcomes, identifying several potential moderators, including psychiatric and medical comorbidities, transitions in care needs and living environments, technology access and literacy, and ageism. Their research also suggests that various biopsychosocial factors, such as reduced stress, improved mental health, and increased physical activity, mediate this relationship. These interconnected influences help explain how social interactions contribute to overall well-being, highlighting the complex interplay between individual health, environmental contexts, and social support networks. For example, through engaging in social activities, older adults may have increased physical activity, which in turn help improve their overall health and well-being (Luo et al., 2020). These studies emphasise the importance of considering these moderators and mediators to better understand the complex relationship between social engagement and the QoL of older adults.

Chronic health conditions or the presence of a disabilities not only affect physical functioning but are also found to contribute to mental health issues such as depression and anxiety (Hyde et al., 2003). A poor QoL is frequently linked to mental health challenges such as depression and anxiety. Park et al. (2023) highlighted that emotional well-being plays a crucial role in overall health, with loneliness and depression increasing the likelihood of cardiovascular diseases, cognitive decline, and other age-related health issues. Mental health struggles can also undermine physical health by decreasing motivation to engage with others, manage chronic conditions, seek support or engage in preventive health behaviours, creating a vicious cycle that further diminishes an individual's well-being and life expectancy (Cooper et al., 2015; Pantell et al., 2013; Park et al., 2023; Perissinotto et al., 2012).

The role of Social Capital as a Buffering Effect

The empirical evidence suggests that high levels of social capital, explored in Chapter 2, foster resilience and enhances the QoL of older people (Berkman et al., 2000). Communities with strong social capital demonstrate resilience, relying on collective action to overcome challenges (Gittell & Vidal, 1998). Individuals in such communities also report better health and well-being outcomes (Nieminen et al., 2013; Putnam, 2000). The presence of strong social capital has been consistently linked to better mental health, reduced rates of anxiety and depression, reduced loneliness, and lower risks of cognitive decline in older adults (Deitz et al. 2020; Holt-Lundstad, 2024; Kawachi & Berkman, 2001; Nyqvist & Cattan, 2014). The mechanisms through which social capital exerts these positive effects is suggested to include enhanced social support, increased opportunities for social engagement, and a greater sense of inclusion (Liamputtong et al., 2022). For older adults, strong social capital is also seen as heightening a sense of security and providing improved access to support networks.

Schnittker (2007) using data from the National Social Life, Health, and Aging Project (NSHAP), a population-based study of older Americans, found that the size and quality of social networks have significant implications for the health and wellbeing of older adults. They suggest that larger and more supportive social networks were seen as being associated with better physical and mental health outcomes. This study also found that one's perception of available social supports derived through their social networks, was crucial for mental health and acted as a buffer against stress and loneliness. Both size and quality of social networks were found to be linked to various health outcomes, with individuals with larger networks and higher perceived support reporting better self-rated health and lower levels of depression. The research suggests that older adults place an increasingly greater emphasis on deeper social ties, with their significance often outweighing that of more superficial or circumstantial connections (Lang & Carstensen, 2002). It is suggested that problems arise when older people lose too many of these ties, resulting in their networks being too small to meet their social needs, resulting in individuals reporting that they feel less socially supported, experience higher levels of loneliness, and have lower levels of satisfaction (Lang & Carstensen, 1994; Rook, 2009).

Hawkley and Cacioppo (2010) using data from the Chicago Health, Aging, and Social Relations Study[10] identify social networks for older adults as providing emotional support which were found to mitigate the effects of stress. They highlight the importance of specific characteristics in social networks such as closure (frequency of contacts among ties) and balance (positive contact among ties). They found that older adults with highly balanced networks experience the least stress. Social networks, as argued in Chapter 2, therefore serve as the structure within which social capital is generated and accessed, facilitating the provision of emotional, informational, and instrumental support, such as assistance with daily tasks, caregiving, and financial help (Wellman et al., 2001). Social networks are also seen to provide effective stress buffers (The Buffering Hypothesis) for individuals through providing emotional comfort, reducing negative appraisal of stressful events, and providing practical support which can help individuals manage stress and consequently contribute to improved wellbeing, physical and mental health outcomes (Hawkley & Cacioppo, 2010; Hoffman et al., 2023; Rook, 2009; Seeman et al. 2001; Thoits, 2011; Willis, 1985).

In New Zealand, research by Morgan et al. (2019) involved in-depth interviews with 44 older adults and 32 focus groups. The study conceptualised social capital as a multi-level concept, encompassing interpersonal relationships and structural arrangements, including neighbourhood and community engagement. The research found that stable and consistent residency, where residents have long-term tenancies, was more likely to promote strong social ties. Further, supportive

[10] The Chicago Health, Aging, and Social Relations Study (CHASRS) was initiated in 2002-2003.

neighbourhoods that offered social support were more likely to reduce feelings of isolation. Mobility and accessible, reliable public transport were also found to be crucial for older adults in maintaining social connections. The study also highlighted that health decline can significantly limit older people's ability to socialise. Additionally, inclusivity of cultural diversity was found to be fundamental to improving social connectedness, suggesting that cultural and community-specific groups play a vital role, especially in overcoming language barriers. Finally, the research noted that older adults often feel like a burden on their families and prefer to foster relationships based on mutual respect and independence.

The Role of Social Activity and Leisure as contributors to Life Satisfaction

In an early empirical study, Lemon et al. (1972) marked a significant shift in understanding the relationship between social and leisure activities and positive ageing. They identified four types of activities that influence this dynamic:

Social activities, including social interaction with family and friends. They suggest that these activities provide emotional support, companionship, and a sense of belonging which reduced feelings of loneliness, which were viewed as crucial for wellbeing.

Productive activities, such as volunteering, part-time work or engaging in hobbies that create societal value. These activities were seen to provide purpose and accomplishment.

Recreational activities, including physical exercise and leisure pursuits which were linked with better physical and mental wellbeing.

Solitary activities, like reading, gardening or engaging in personal hobbies which they found to provide a sense of engagement and personal fulfilment.

Their findings underscored the importance of a diverse range of activities in contributing to positive ageing and enhancing life satisfaction. Particularly important their research suggested that informal social activity (with familiar people such as relatives, friends or neighbours) and productive activities have the strongest impact on life satisfaction, more than formal social activities (such as clubs, religious organisations or community groups) or solo activities (see also Killen & Macaskill, 2020). Lemon et al. (1972) also suggests that both the frequency, level of intimacy and more meaningful the activity the higher the life satisfaction among older adults.

In a challenge to the findings by Lemon and colleagues, more recent research suggests that older adults involved in a disproportionate level of solitary activities, in comparison to social activity, tend to have lower levels of life satisfaction (Baeriswyl & Oris; 2023; Lam & García-Román, 2020; Maher & Conroy, 2017; Skalacka & Germyski, 2016). The argument that informal social activities have a stronger impact on life satisfaction than formal or solitary activities is well-supported by subsequent studies (Baeriswyl & Oris, 2023; Longino & Kart, 1982; Huxhold et al., 2014) which

indicate that interactions with relatives, friends, or neighbours, as well as productive activities like volunteering or part-time work (discussed below), significantly enhance life satisfaction. These findings are echoed by Rodríguez et al. (2007), who found that informal social activities are highly related to life satisfaction, while formal activities have a lesser impact. Similarly, a recent study by Wu et al. (2024) in China found that social participation, especially through informal community interactions, significantly improved life satisfaction among older adults. Huxhold et al. (2014) also highlighted informal social activities as being associated with key aspects of successful ageing, going beyond the structural support potential of social networks (like having people to call upon in times of need). These activities were found to provide emotional support, companionship, and a sense of purpose, seen as crucial for well-being. In contrast, formal social activities, such as participation in clubs, religious organisations, or community groups, while enhancing QoL played a lesser role (Groenewegen et al., 2006).

A comprehensive review of literature by Adams et al. (2011) discusses the positive association between a "participating lifestyle" (including social and leisure activities) during the course of one's life and positive well-being in later life. They posit that the impacts of engagement in informal social activities accumulate, with the strongest evidence showing impacts on well-being, lower levels of loneliness and isolation, and reduced indications of depression. Their analysis suggests that recreational and leisure activities may affect wellbeing through their intellectual and physical demands, through enjoyment and pleasure in the company of others, and through enhancing one's self concept (e.g., I'm good at this activity). The authors defined potential mediating constructs which suggest that choice and control over the activity, the satisfaction found in the activity or from social participation, and the meaning derived from the activity were each relevant to the engagement/wellbeing relationship. Their synthesis highlights the importance of moderating factors in the relationship between social and leisure activity and well-being in later life. Key influences include psychological factors, personality traits, cultural contexts, socio-economic status, gender, and physical functioning.

Various social activities whether it is involvement in work, or social participation activity have been found to provide important structures and routines for older individuals as well as contribute to the maintenance of physical activity resulting in positive health consequences (Kelly et al., 2017). In their work, Kelley et al. (2017) also found that social activity was linked to global cognition, executive functioning, working memory, visuospatial abilities, and processing speed. They also identified correlations between social support and both global cognition and episodic memory, though the exact nature of these associations were unclear.

Work Fulfilment Among Older Workers

Extending working life in older age is linked to a range of benefits that contribute to overall wellbeing. Continued employment not only supports financial stability but also fosters social engagement and access to support networks (Amabile & Kramer, 2011; Carstensen & Charles, 1998; Mori et al., 2024; Oxley, 2009; Sewdas et al., 2017). Work can also offer a sense of purpose and identity, enhancing self-esteem, confidence, and personal value (Cole, 2013; Crain & Hammer, 2013; Holt-Lunstad et al., 2010; Waddell & Burton, 2006). Additionally, the structure and routine of work, along with opportunities for cognitive stimulation and physical activity, are associated with better mental and physical health outcomes, including reduced risks of loneliness, depression, and cognitive decline (Alpass & Towers, 2022; Andrieieva et al., 2019; Huo et al., 2021; Monteiro et al., 2024; Morrow-Howell et al., 2003). Collectively, these factors can enhance life satisfaction and support healthier, more engaged ageing.

There are however mixed views about the benefits of extending working life on the QoL of older adults. While extended employment may lead to social and mental health benefits, it may also lead to increased stress through reduced leisure time or conflict with other caring obligations. Equally, those who continue working out of financial necessity may not experience the same positive health outcomes as those who work through choice (Baxter et al. 2021). The nature of work is also seen as being crucial. Older workers are seen to find fulfilment in work that is meaningful, flexible, intellectually stimulating, and supports social connectedness. Researchers highlight work content, work culture and workplace adjustments as crucial (Buckle, 2015; Marvell & Cox, 2017). A literature synthesis by Mori et al. (2024) suggests that physical and mental demands of work can be more challenging for older workers, potentially leading to decreased engagement. Stressful or physically demanding jobs may have adverse effects on health, particularly for those with pre-existing health conditions or reduced functional abilities. Similarly, prolonged engagement through one's life course in "poor quality" work can take a cumulative impact leading to poor health outcomes (Mori et al. 2024; Sewdas, 2017). This emphasises the dual nature of work as both supportive but potentially jeopardising for healthy ageing (Staudinger et al., 2016; Winkelmann-Gleed, 2011). Baxter et al. (2021) through a major literature synthesis suggest that working longer while beneficial for some, it is crucial to consider job quality and individual circumstances to mitigate potential negative impacts. In respect of physical health, they find that extended employment can have either beneficial or neutral effects on overall health, and physical wellbeing. They suggest for mental health the findings are more varied. While some older workers experience positive effects, others particularly those in high-demand or low-reward jobs may face adverse mental health outcomes, increased stress, adverse mental health outcomes, and a higher risk of musculoskeletal disorders (see also Choi et al.,

2022). For many older individuals, particularly those with limited access to “desirable employment” options, the pressures of work can exacerbate stress, leading to negative consequences for mental health and overall well-being (Shultz & Wang, 2011). This is especially true when the work is perceived as a necessity rather than a choice, or when older workers are faced with age-related discrimination, which can lead to feelings of marginalisation and stress (Finkelstein, 2013).

It is also suggested that those who can choose to work part-time or to reduce their hours, often benefit more when compared with those who must continue working full-time (Alpass & Towers; 2023; Baxter et al. 2021;). Participation in part-time work has been associated with improved physical and psychological health, as older individuals balance work demands with other aspects of life (Devereux et al., 2009; Wang & Shultz, 2010).

The Impact of Social Connectedness and Loneliness on Outcomes for Older Adults

As described in Chapter 2, Social Connectedness is defined by the individual’s perceived sense of acceptance, being valued, and feeling supported, regardless of the level of external engagement (Wills, 1985). High-quality social relationships, characterised by emotional support, mutual care, trust, and acceptance, have been shown to enhance emotional regulation, cognitive processing, and self-esteem, thereby playing a critical role in promoting well-being, including greater life satisfaction, emotional resilience, and a stronger sense of self-worth (Allen et al., 2023; Cacioppo & Patrick, 2008; Carrasco et al., 2024; Hoffman et al., 2023; Holt-Lunstad et al., 2010). This emotional connection is seen as contributing significantly to well-being, even if social participation in activities is limited (Holt-Lunstad et al., 2010). The quality of one’s relationships is thought to shape overall mental and physical health, highlighting their importance in later life (Cornwell & Waite, 2009; Holt-Lunstad et al., 2015; Zunzunegui et al., 2003). Their impact on outcomes appears pervasive with the presence of strong social relationships found to be linked with faster recovery from illness (Nazir et al., 2024; Seppala, 2014) lower levels of chronic illnesses (Uchino, 2006), lower mortality and increased longevity (Chen et al., 2024; Goodman, 2023).

Social connectedness has equally been shown to be crucial in protecting against cognitive decline and depression by providing meaningful mental stimulation (Bassuk et al., 1999; Clarke et al., 2015; Cornwell & Waite, 2012; Fratiglioni et al., 2004; Middleton et al., 2010; Samtani et al., 2022; Seeman et al., 2001; Piolatto et al., 2022; Wister, 2009; Zhaoyang et al., 2024; Zunzunegui et al., 2003). Ertel et al. (2008), using data from the Health Retirement Study (HRS) in the United States, found that social engagement can delay memory loss, with the least integrated individuals experiencing memory decline at twice the rate of the most integrated. Samtani et al. (2022) further supported these findings, suggesting that social connections may protect against dementia and other cognitive impairments.

Social Connectedness Vs Loneliness

As discussed in Chapter 2, social connectedness and loneliness are deeply intertwined, (Ang, 2021). A critical question in research into ageing is whether the presence of social connectedness or conversely loneliness, are the actual drivers of life course outcomes in older adults (Cacioppo & Hawkley, 2003). And whether they have distinct influences in terms of outcomes? The research suggests that while social connectedness typically enhances mental health and QoL by fostering feelings of belonging, loneliness has been found to be highly associated with a range of negative health outcomes, including depression, cognitive decline, and increased mortality risk (Cacioppo & Patrick, 2008; Hawkley & Cacioppo, 2010). In a recent meta-synthesis involving 22 studies from across various countries, the estimated prevalence for moderate loneliness was found to be 27% and severe loneliness 32% and the estimated prevalence of social isolation was 34% among the oldest-old (those aged 80 and older) (Hajek et al., 2023). This suggests that loneliness and social isolation (the absence of social participation) are significant problems in the oldest-old population, pointing to the criticality of measuring these relationships and in understanding the determinants of loneliness and social isolation for older adults.

Many studies frequently examine both concepts together because of their perceived overlapping effects (Roy et al., 2023). Loneliness and isolation often fuel each other, and consequently both need to be understood in order to improve overall well-being (Hajek et al., 2023). Existing research suggests that social isolation and loneliness are significantly associated with adverse health outcomes, including higher rates of chronic disease, cognitive decline, poorer mental health, depression, increased mortality, dementia, rehospitalisation, falls, and a diminished QoL in older adults (Cacioppo et al., 2006; Cacioppo & Cacioppo, 2014; Cacioppo et al., 2015; de Jong Gierveld et al., 2018; Eng, 2002; Fratiglioni, 2004; Holt-Lunstad et al., 2015; House et al., 1988; Huang et al., 2023; Tragantzopoulou & Giannouli, 2021; Shankar et al., 2011). This body of research suggests that social isolation is a stronger predictor of physical decline, while loneliness is more indicative of mental health issues (Cacioppo & Patrick, 2008). Additionally, mental health conditions such as depression and anxiety are identified as both risk factors and consequences of loneliness (Hajek et al., 2023), establishing a cyclical relationship between these issues. A nationally representative dataset of the Ireland (TILDA) and English (ELSA) Longitudinal Studies of Ageing sought to measure the discrepancy between loneliness and social isolation through comparing standardised scores on a Loneliness Scale and Social Isolation Scale in relation to cognitive outcomes both horizontally and over a two-year follow-up (McHugh et al., 2017). The analysis found that social asymmetry is a significant predictor of cognitive outcomes. Specifically, individuals with high levels of loneliness but low social isolation (or vice versa) showed poorer cognitive performance compared to those with

consistent levels of loneliness and social isolation. In effect the study suggested that both loneliness and social isolation independently and interactively affect cognitive functioning and overall health.

Cacioppo et al. (2015) go further linking loneliness and social isolation to stress and the body's immune response to perceived threats, such as infections or injuries, which in turn can impair immune system functioning and increase vulnerability to disease. The absence of social support and engagement is suggested as exacerbating these issues, creating a self-reinforcing cycle that is difficult to break. Therefore, it is essential for research to distinguish between the benefits of positive social engagement and the detrimental effects of social isolation and loneliness (Cacioppo & Cacioppo, 2014; Holt-Lunstad et al., 2015). Research from the Stanford Centre on Longevity has gone as far as to claim that the absence of human connection is more detrimental to health than obesity, smoking or high blood pressure. In their study they found that socially isolated individuals face mortality risk twice that for obese individuals (Kokubun et al., 2021). In a meta-analysis reviewing 148 studies covering 300,000 participants, Holt-Lunstad et al. (2010) suggest that the existence of strong social connections increases longevity by 50% when compared with those with weaker social relationships. This effect was consistent across various factors including age, gender, initial health status and cause of death. This study also found that both the quantity and quality of social relationships matter. Close supportive relationships were particularly beneficial, but broader social networks were also found to contribute to the reduced risks of mortality. The strongest associations were found for complex measures of social integration (involving network size, frequency of contact and participation in social activities), in contrast to simpler measures like living alone versus with others. In their meta-synthesis of studies of the oldest old, Hajek et al. (2023) found that poor social relations resulted in a 32% increase in the risk of stroke and a 29% increase in coronary heart disease in the oldest-old population.

Methodological Considerations

The relationship between living arrangements, social relationships, and QoL in older adults is complex, yet current research reveals several methodological limitations that restrict a deeper understanding of this topic. As Rodríguez-Blázquez and Forjaz (2022) point out, much of the existing literature relies on cross-sectional designs and employs overly simplistic or inconsistent measures of QoL. These approaches often fail to account for the dynamic and evolving nature of ageing, overlooking how individuals' experiences and well-being change over time. Furthermore, studies frequently neglect the long-term effects of different living arrangements and fail to consider the diverse experiences of older adults across various cultural, socioeconomic, and community contexts. As a result, there is limited insight into how contextual factors such as culture, income, or neighbourhood environments influence QoL, making it difficult to generalise findings across

populations. This highlights the need for more nuanced, longitudinal, and culturally sensitive research to better understand the complex interplay between living arrangements and well-being in later life (Rodríguez-Blázquez & Forjaz, 2022).

A further limitation in the literature is the oversimplified, and unidirectional view of the relationship between social engagement and well-being outcomes, including health outcomes. Many studies assume a direct positive causal link without adequately addressing how these effects manifest or vary across different populations. Piolatto et al. (2022) explored this relationship through meta-regression and subgroup analysis on studies examining cognitive decline, identifying several moderators that could influence the strength and direction of the relationship between social engagement and cognitive health. These moderators include factors such as age, gender, socioeconomic status, and baseline cognitive function. For example, social engagement may have a stronger protective effect for individuals with higher socioeconomic status or better cognitive function at baseline. Additionally, Piolatto et al. (2022) discuss potential mediators such as psychological factors (e.g., reduced stress), biological factors (e.g., improved cardiovascular health), and behavioural factors (e.g., increased physical activity), all of which may explain how social engagement impacts cognitive decline.

Another significant critique in ageing research is the broad categorisation of individuals aged 50 and older as "old," without recognising the distinct needs and experiences of the young-old, old-old, and oldest-old subgroups. This lack of differentiation leads to oversimplified conclusions that fail to address the unique needs and differences of these age groups (Badache et al., 2023). Additionally, the population structure of ageing studies, which often includes a disproportionately large number of younger-old individuals, can skew findings if these factors are not properly controlled. This can result in a limited understanding of the experiences of older individuals, particularly those aged 85 and older (Abud et al., 2022; Martin et al., 2015).

Piolatto et al. (2022) and Roy et al. (2023) stress the importance of longitudinal research to better understand the long-term effects of social engagement on QoL outcomes. Longitudinal studies, which track individuals over extended periods, provide a clearer understanding of how changes in social engagement impact health and well-being, distinguishing short-term fluctuations from long-term trends. These studies are often viewed as instrumental in developing targeted interventions to support older adults (Piolatto, 2022; Roy et al., 2023; Wang et al., 2016). There are however also notable limitations which have received little focus in the literature cited in this chapter. A key issue is that the cohorts in these studies may not represent future generations of older adults. For example,, advancements in healthcare and living conditions could lead to longer, healthier lives, making findings from older cohorts less applicable to future populations (Harris et al., 2020).

Moreover, the overreliance on quantitative research, while valuable, often neglects the richness of qualitative data. Qualitative research, which includes the voices of older adults, can add depth to empirical studies, providing a more nuanced understanding of their experiences (Badache et al., 2023). Additionally, research in this field has been criticised for focusing disproportionately on positive outcomes, while overlooking negative effects such as the stress of maintaining social ties or the potential for negative social interactions, such as racism (Hoffman et al., 2023). Lastly, concerns about the applicability of international findings to New Zealand's unique context remain, given its cultural, economic, and demographic differences.

Conclusion

This chapter began by introducing QoL as a multifaceted concept, shaped by physical health, psychological state, social relationships, and environmental factors, along with cultural and societal contexts. It was argued that its relevance in ageing research lies in its universal applicability, irrespective of individual backgrounds or circumstances. The literature review then went on to examine the various factors impacting older adults' QoL, revealing their complexity and interconnectedness. Health and disability were identified as major determinants, influencing both QoL and life satisfaction (Memisevic & Ibralic, 2024). Poor health, disability, and frailty limit community participation, independence, and QoL, while loneliness and poor QoL equally impact health and disability outcomes.

Living arrangements were identified as playing a critical role in shaping physical, emotional, and social well-being. Some studies suggest independent living supports autonomy and higher life satisfaction (Lichtenstein et al., 2003; Pinquart & Sörensen, 2000), but others highlight increased loneliness and limited social networks among older people living on their own. Continuing to live in one's own home is often beneficial, though it depends on factors such as housing quality, location, access to services, and the absence of financial or maintenance stressors (Davey, 2006). Disability and ill health were identified as particularly detrimental to the QoL of those living alone and suggested as changing completely the prognosis for this living arrangement. Economic resources were viewed as essential for those living independently (Wijesiri et al., 2023). Importantly, social engagement was seen as a big contributor to mitigating the effects of loneliness among older people living independently.

Few studies examine cultural differences in QoL, though some suggest that social engagement and QoL may vary depending on cultural orientation (Lykes & Kemmelmeier, 2014). In collectivist societies, individuals are suggested as experiencing lower satisfaction with life when separated from family, while individualistic societies see a similar effect when individuals are cut off from their social networks (Burholt et al., 2018). Research on cultural differences between Māori,

Pacific communities, and Asian family-driven cultures in New Zealand remains limited. What research that exists suggests that for Asian older people living with one's family may be insufficient to overcome being cut off from social networks due to language and cultural differences within these communities.

Social capital was found to play a significant role in enhancing older adults' well-being, fostering safety, security, and a sense of community, leading to better mental health and reduced cognitive decline (Holt-Lunstad et al., 2015). Poor housing and unsafe neighbourhoods were conversely seen to hinder social engagement and well-being (Vanleerberghe et al., 2017).

I have argued here that research often conflates concepts of social capital, engagement, and connectedness, overlooking distinctions between latent and active social networks. These networks have distinct effects on outcomes for older adults (Cornwell & Waite, 2012). The quality and emotional closeness of relationships, rather than their quantity, were suggested as being crucial in mitigating loneliness and isolation (Cacioppo & Cacioppo, 2014; Lang & Carstensen, 2002). For older adults living alone, emotionally fulfilling relationships are suggested as providing a protective factor against loneliness and depression (Berkman et al., 2000; Cornwell & Waite, 2012). However, many studies oversimplify social connectedness by measuring it based solely on network size, ignoring the qualitative aspects of relationships.

The role of older adults in their social networks, whether as receivers or givers of support, and the extent of mutual reciprocity, was also generally overlooked in available research (Roy et al., 2023).

Research on work as a mechanism in supporting QoL in later life presents mixed evidence. While work can provide both economic support and social engagement, routines and result in physical activity, it was also suggested as contributing to stress and psychological strain, especially when work choices are constrained (Pinquart & Schindler, 2007). The cited research demonstrates that positive outcomes largely depend on the nature and flexibility of the work. The literature traversed in this chapter suggests that part-time or adaptable work arrangements are considered optimal, as they provide a balanced combination of social interaction and economic stability while minimising stress.

Finaly, this chapter also highlights various methodological concerns and weaknesses in the literature on social connections and QoL. A major critique of many of the studies presented here is the lack of distinction between different age groups within the older population. Where distinctions are drawn, findings indicate significant differences, particularly between those under 80 and those over 80, in terms of LA, social isolation, and experiences of loneliness. The chapter also critiques the unidimensional nature of many studies that suggest cause and effect, the lack of cultural

considerations, and the tendency to overgeneralise findings, overlooking significant cultural, socioeconomic, or educational differences. The discussion of the literature, particularly in relation to that associated with retirement effects show the substantial advantages of longitudinal methodologies over cross sectional analysis in understanding QoL outcomes. Additionally, it was found that the research often lacked sophisticated empirical approaches to isolate moderator and mediator effects in modelling the relationships between social connectedness and QoL.

Chapter 4: Research Objectives & Hypothesis

Chapter three identified the relative strength and weaknesses in our understanding of the relationship between social networks, engagement, and connectedness on the quality of life (QoL) for older adults. It also highlighted differences in findings relating to different living arrangements (LA) of older adults. Building on the literature reviewed in Chapter 3 and the theoretical perspectives on psychological determinants of QoL and adaptation introduced in Chapter 2, this thesis advances a series of research hypotheses grounded by these interdisciplinary insights. Central to this framework is understanding the multidimensional influences of structural, relational, and intrapersonal factors on the QoL of older adults. Within this context, the pursuit of personal interests, sustained social engagement, and the cultivation of supportive networks are conceptualised as mechanisms through which older adults may achieve enhanced autonomy, self-realisation, emotional satisfaction and enjoyment, combining together to enhance perceptions of life quality. These theoretical foundations guide the development of hypotheses concerning how living arrangements and moderating factors shape QoL outcomes.

Hypothesis 1a: *Older adults Living Arrangements will result in significant differences in their QoL two years later. Within this older adults living alone will have poorer overall QoL than those living with a partner or with family.*

The extent to which older adults LAs significantly impact their QoL is a central concern in ageing research, whether alone, with a partner, with family or others will affect states of emotional, psychological and physical wellbeing differently. The assumptions embedded in each of five different living situations are provided in Table 2. As describe in the previous chapter it is expected that those living with a partner or with family will report a higher QoL to those living alone. And for those living alone, QoL will diminish as people get older because of diminishing social relationships, and a loss in depth of social engagement. In addition to instrumental and emotional support, it is suggested that a key driver of QoL, as measured by CASP-12, for those living with a partner include their sense of control and autonomy as tasks and decision-making responsibilities are shared, reducing the burden of doing these alone. Partnered relationships are equally more likely to support individuals achieve a greater sense of self-realisation and pleasure; core elements contributing to the QoL measure employed in this study. Conversely for those living alone, it is suggested that limited support networks may impede opportunities for self-expression or enjoyment, thereby diminishing QoL. It is equally suggested that living within family contexts will undoubtedly influence autonomy and control as individuals need to abide with family routines and more complex decision-making processes. The adoption of a lag effect in the measurement of QoL aims to establish a causal inference, through the analysis.

Although the sample size of the NZHWRS (see Chapter 5) limits the ability to conduct detailed analysis across specific ethnic groups, it is hypothesised, drawing on international research, that individuals from collectivist-oriented cultures are more likely to report a higher QoL when residing in multi-family or intergenerational households. In the New Zealand context, this suggests that Māori, whose cultural values emphasise whanaungatanga (kinship and connectedness), may experience greater satisfaction and wellbeing when living with extended family compared to non-Māori counterparts (Boulton & Gifford, 2014).

Hypothesis 1b: *Age will have a moderating effect on the causal relationship between LAs and QoL. Quality of life will decline as age increases for those living alone but improve for those living with their family. The QoL for those remaining with a partner will also decline but to a lesser extent than those living alone.*

Hypothesis 1b suggests that age significantly influences the relationship between LA and QoL. Older adults, especially those over 80, may face a more pronounced negative impact on QoL when living alone due to reduced social relationships. However, improvements in emotional regulation and adaptive coping with age might buffer these effects. Theories like Socioemotional Selectivity Theory (SST) and Strength and Vulnerability Integration (SAVI) indicate older individuals manage negative emotions better and prioritise meaningful relationships, enhancing subjective wellbeing (Carstensen et al., 1999; Charles, 2010). The Selection, Optimization, and Compensation (SOC) theory states that older individuals trade independence for stronger social connections, emphasising emotional security over self-sufficiency (Baltes & Baltes, 1990; Freund & Baltes, 2002). QoL may decline for those living with a partner as people get older compared with those living with family due to weaker social support, caregiving strain, and limited emotional buffering. Family offers broader connections, shared responsibilities, and a stronger sense of belonging. In contrast, partners may face isolation, especially if both are ageing, dealing with health challenges or providing care for a spouse.

Hypothesis 1c: *Gender will have a moderating effect on the causal relationship between LAs and QoL. Compared with the overall causal relationship, the QoL for males will decline for those living alone. Males living with family will have a lower QoL than males living alone. By contrast females living alone and with family will have an improved QoL when compared with the overall causal relationship. There will be no changes in the QoL for either gender living with a partner.*

While both men and women may experience challenges associated with living alone, research suggests that gender shapes exposure to risk and access to resilience in distinct ways (Arber & Ginn, 1995; Calasanti et al., 2004). Women are considered to possess stronger social networks and are more inclined to seek and receive emotional and practical support (Antonucci et al., 2003). In

contrast, older men living alone often experience greater social isolation and are less likely to engage in help-seeking behaviours (Nicolaisen & Thorsen, 2014; Willis et al., 2022).

Hypothesis 1d: *Older adults living with a disability or ill-health will report lower levels of social participation and social connectedness compared to those without disabilities.*

Hypothesis 1e: *Disability or ill health will have a moderating effect on the causal relationship between LAs and QoL, such that the negative impact of living alone will be more pronounced among those with disabilities.*

Disability, especially when it involves impairments in mobility, self-care, or sensory functions, often restricts an individual's ability to engage in daily activities, access resources, and maintain social relationships (Doyal et al., 1991; Lloyd, 2009). In such circumstances, the presence or absence of co-residing support becomes a critical determinant of wellbeing. Older adults with disabilities who live alone face an elevated risk of social isolation, unmet care needs, and reduced access to both formal and informal support networks (Verbrugge & Yang, 2002). This hypothesis further posits that while external carers may offer essential practical assistance, such support is often insufficient to mitigate the broader consequences of living alone. In particular, formal care services tend to prioritise functional needs, often neglecting the emotional, relational, and psychosocial dimensions of wellbeing (Johnston, et al., 2023).

Hypothesis 2: *The changes in living arrangements two years later would moderate the causal relationship between LAs and QoL. Those who shift from living alone to a partnered LA or family LA will record an improved QoL. Those who shift from a partnered or Family LA to that of living alone will record a significant reduction in QoL. The QoL for those who continue to live alone will also diminish further.*

This hypothesis posits that the trajectory of living arrangements over time, specifically whether an older adult remains living alone or transitions to co-residing with others, has a significant moderating effect on QoL outcomes. Older adults who continue to live alone across two time points are hypothesised to report a lower QoL. Equally, those that transition from partnered to a family LA will report diminished QoL, but higher than that for those who live alone. The assumption underlying this hypothesis is that living with a partner offers significant emotional and practical support, and any disruption to this arrangement may negatively impact QoL. It equally assumes the shift from a partnered arrangement will be associated with grief, the loss of intimate connections and shared life experiences which may contribute to deep seated depression. The requirement to make adjustment to alternative LAs, and the loss of lifetime routines may make changes in LAs particularly challenging.

Table 2

Living Situations, Quality of Life Influences, and Associated Outcomes Based on Literature and Theoretical Review

Living situation	Quality of Life influences based on the above literature and theoretical review	Assumed quality of life outcome	Presence of disability or ill health	Poverty / low income
Living with a partner	Companionship and emotional support provided by a partner can enhance feelings of control, autonomy, self-realisation and pleasure, contributing to a better overall QoL.	Very high positive QoL	Reduces QoL outcomes	Reduces QoL, although overall QoL remains higher than other forms
Living with family members	Living with one's family fosters strong emotional bonds and a sense of connectedness. Reciprocal sharing and contribution to tasks provide a sense of self-worth and a reduction in social isolation and loneliness. Family members may also reduce the potential stressors providing practical resources. Such circumstances may however reduce autonomy and control through a need to fall in with family decision making and routines.	High positive QoL	Reduces QoL outcomes	Nil impact Access to wider family resources, allows for resources to be shared and reduces the stress of needing to meet particularly financial shocks.
Living alone	When older adults live alone, they may experience reduced social interaction and a loss of support with decision-making and problem-solving, leading to a decreased sense of control. Mobility and health challenges can further limit their autonomy, making engagement in meaningful activities and personal growth more difficult without the encouragement of others. The absence of shared activities often results in loneliness and diminished enjoyment of life. Additionally, an inability to access resources or	Low to poor QoL	Reduces QoL outcomes	Severely reduces outcomes given there is no ability to share costs or to address shocks. Costs in one domain will result in going without in another domain.

	share responsibilities may contribute to higher levels of stress.			
Living with others	Living with others may potentially support increased social interaction and support with shared activities enhancing feelings of control, autonomy, self-realisation and pleasure. Such situations may however not provide emotional support or impact stressors associated practical daily challenges and will be highly dependent on the nature of the household relationships.	Moderate to high QoL	Reduces QoL outcomes	Reduces outcomes

Hypothesis 3a: *Work status will have a moderating effect on the causal relationship between LAs and QoL. Involvement in work will result in a higher overall QoL for those living alone and reduce QoL for those in partnered or family LAs.*

Hypothesis 3b: *Involvement in work will positively impact QoL for older adults.*

Hypothesis 3c: *Work status will have a positive correlation with social connectedness.*

It is hypothesised that the relationship between LAs and QoL is moderated by work status, with differential effects based on whether older adults live alone or with others. For those living alone, employment, particularly part-time or flexible work, can significantly enhance QoL by providing financial stability, daily structure, a sense of purpose, and opportunities for social interaction (Moen & Chermack, 2005; Ng & Feldman, 2008).

Employment can reinforce control over one's daily routines, support greater financial autonomy and create pathways for self-expression and achievement; key components contributing to self-realisation. These factors may buffer against the isolation and reduced support often associated with solitary living.

In contrast, for those living with a partner or family, the impact of employment is more complex. While part-time work may have a modest positive effect, full-time work for older adults can lead to role conflict, particularly where caregiving or household responsibilities compete with occupational demands (Moen et al., 2008). This may limit time for leisure and emotional connection, potentially diminishing QoL. Additionally, retirement can produce both positive and negative effects, depending on living context, with potential losses in structure and social participation linked to poorer wellbeing (Pinquart & Sörensen, 2000; Carr et al., 2014). Equally it is hypothesised that work engagement provides opportunities for deeper and wider social relationships. If this is found not to be the case, but work is seen to influence QoL, this suggests that other features of work are at play in impacting QoL.

Hypothesis 4a: *Social participation will moderate the relationship between LAs and QoL. Involvement in social participation will result in a higher overall QoL for those living alone and have nil effect for those in partnered or family LAs.*

Hypothesis 4b: *Social participation will have a positive correlation with social connectedness.*

This hypothesis proposes that social participation serves as a protective factor, particularly for older adults living alone. Engaging in community activities, volunteering, or maintaining social ties with friends and family can reduce isolation, provide emotional support, and contribute to a stronger sense of purpose, factors that are closely linked to enhanced wellbeing (Litwin & Shiovitz-Ezra, 2011). For individuals living with a partner or family, the benefits of social participation may be less pronounced, as their daily interactions with family members often fulfil emotional and practical

support needs (Pinquart & Sörensen, 2000). In contrast, for those living alone, social participation may play a crucial role in sustaining QoL by offering external sources of connection and engagement. An individual's decision to engage in activities, pursue personal interests, and cultivate social networks actively contributes to a sense of autonomy, supports self-realisation, and enhances QoL through the enjoyment and fulfilment these pursuits provide. Equally, social participation allows individuals to form deeper social relationships and reduce risks associated with loneliness (Holt-Lunstad et al., 2010).

Hypothesis 5a: *Social connectedness will moderate the relationship between LAs and QoL. Higher levels of social connectedness will result in higher overall QoL for those living alone and have a nil effect for those in partnered or family LAs.*

Hypothesis 5b: *The moderating effect of social connectedness will be stronger than that of social participation.*

These propositions are grounded in evidence suggesting that the depth and quality of interpersonal relationships, reflected in the concept of social connectedness, play a critical role in shaping older adults' subjective wellbeing, above and beyond mere participation in social activities. While both social participation and connectedness are important, the latter encompasses emotional intimacy, perceived support, and a sense of belonging, which are viewed as particularly protective in later life (Antonucci et al., 2003; Holt-Lunstad et al., 2010). Conversely, low social connectedness, especially among those living alone, can lead to emotional distress, and diminished outcomes. Therefore, it is expected that social connectedness will serve as a more powerful moderator of QoL than general social participation, particularly for those in less supportive LAs.

Conclusion

This chapter has synthesised existing theoretical and empirical research to develop a set of hypotheses concerning the relationship between LAs and QoL among older adults. The chapter highlights the complex interaction between structural factors (LA, work and income), individual attributes (age, disability and ill health, and gender), and the strength of psychosocial resources (drawing on Social Capital Theory and Activity Theory) in influencing perceived QoL for older adults.

A significant focus, in what is hypothesised, is placed on understanding how characteristics such as age, gender, disability, and income influence this relationship. The chapter identified five interrelated hypotheses designed to explore how different living situations involve different contributions to the QoL of older adults which were subsequently tested. Certain living arrangements involving co-residence with a partner or family are suggested as being associated with higher QoL in later life, as they provide protection against social isolation, strengthen emotional and social bonds, and offer readily available practical support. These relational and instrumental

resources are suggested as contributing to key dimensions of QoL, including, autonomy, control, self-realisation and pleasure. Conversely, the assumptions presented suggest that older adults living alone will as a group experience a lower QoL compared to those living with a partner or family. The decline in social engagement and the effects of loneliness are posited as being particularly impactful as people get older and for those with a disability.

Chapter 5: Method Research approach and method

This study utilised longitudinal regression analysis, using SPSS, to investigate the temporal sequencing of events for participants in the 2018 (T1) and 2020 (T2) waves of the New Zealand Health, Work and Retirement Study (NZHWRS). Temporal order analysis plays a crucial role in understanding the sequence in which events or conditions unfold over time, offering insights into their interrelationships and potential causal mechanisms, as opposed to merely identifying correlational or cross-sectional associations. This analytical approach is particularly advantageous in longitudinal studies, as it facilitates the establishment of causal inferences by ensuring that the independent variable precedes the dependent variable in time (Allison, 2009).

Through this methodological framework, the study explored the causal relationships between Living Arrangements (LA) at T1 and perceived Quality of Life (QoL) at T2. Most studies sighted in the literature exploring these relationships have sought to examine the correlation between independent and dependent variables. While methodologically straightforward and easy to interpret, they do so without considering interaction effects. Where studies explore these effects, they typically undertake stratified analysis where different subgroups are analysed separately to identify differences. The current study explored these relationships through testing the moderating effects of six factors (gender, age, disability, work status, social participation, and social connectedness) in regard to this causal relationship (Faudzi et al., 2019; Mahadevan & Fan, 2025; Nadaf & Eljo, 2024). Incorporating moderators deepens and enriches the examination by uncovering how the strength or direction of relationships between variables varies across different conditions. This process effectively highlights both risk and protective factors. It also fosters theoretical advancement by enabling a more refined understanding of complex dynamics. Furthermore, moderators enhance the generalisability of results by identifying the contexts in which outcomes are most favourable or challenging, thereby providing stronger guidance for shaping policy and practical interventions.

Data source

The New Zealand Health, Work and Retirement Study (NZHWRS) is a population-based longitudinal study involving a representative sample of New Zealanders aged 55 and older. The survey instruments used in this research are proprietary and used under permission. While selected items are described to illustrate the methodology, the full questionnaires are not reproduced due to copyright restrictions (Appendix 1). Conducted by the Health and Ageing Research Team (HART) at Massey University, the study investigates the primary factors influencing the health and well-being of older adults in New Zealand (Allen et al., 2020). Its measures and design are tailored to enable

cross-cultural comparisons with other prominent international ageing studies while accounting for New Zealand's distinct cultural and social contexts.

The NZHWRS commenced with its first wave of participants recruited, via the New Zealand electoral roll in 2006. Respondents are surveyed biennially via postal survey. As a longitudinal study, participants remain in the study and are resurveyed if they: (1) have a postal address in New Zealand; (2) are not deceased; (3) are not otherwise known to be lost to contact, and (4) have not informed the study they wish to withdraw their participation. The respondent cohort is refreshed at every wave with new participants aged 55 - 57 years added to the study cohort through random selection from the electoral roll. Inclusion criteria: (1) New Zealand postal address; (2) residing in the general community.

Ethical Approval & Consent

Ethical approval for the study was granted for the NZHWRS by the Massey University Human Ethics Committee (Southern B, Application 13/30; Southern A, Application 15/72). Formal consent is received from respondents at time of entry to the study. Respondents are subsequently free to withdraw from the study at each successive wave.

Procedure

For the analysis presented in this thesis, data from the 2018 (T1) and 2020 (T2) waves of the study are utilised. Surveys for these waves were distributed and collected from study participants by mail. Two rounds of follow-up were undertaken at week 12 and week 15 for non-respondents. The study population consisted of individuals who participated in the survey in both 2018 and 2020. This commenced with a total of 3,275 valid responses. Following treatment for missing or invalid data (discussed below) the study sample reduces to a total of 2,081 participants. The general instruction for 2018 and 2020 HWR survey is attached in Appendix A. A copy of the full survey can be found at: https://www.massey.ac.nz/?h4d295120s.

Measures Employed to Construct the Model

Living Arrangement (LA)

The measure of Living Arrangement (LA) used in the survey is based on the "Household Composition" question from the New Zealand Census conducted by StatNZ. This multiple-choice question comprises 10 items and asks respondents to indicate all the people living in their household by selecting the appropriate options. The response options include:

1. I live alone
2. My partner or de facto, boyfriend or girlfriend
3. My parent(s) and/or parent(s)-in-law
4. My son(s) and/or daughter(s)

5. My sister(s) and/or brother(s)
6. My flatmate(s)
7. My grandchild(ren)/mokopuna
8. My friend(s)
9. My boarder(s)
10. Others

Participants who selected "Yes" for item (1) only, without selecting "Yes" for any other items, were categorized as “living alone.” Those who selected "Yes" for item (2) were categorised as “living with a partner.” Participants who did not select "Yes" for item (2) but selected "Yes" for any of the items (3), (4), (5), or (7) were categorised as “living with family.” Finally, participants who did not select "Yes" for items (2) through (5) or (7) but selected "Yes" for any of the items (6), (8), (9), or (10) were categorised as “living with others”.

Dependent Variable: CASP- 12

QoL was measured using the CASP-12 scale, which is a modification of the original CASP-19 (Hyde et al., 2003). Building from Maslow’s Human Needs Theory (Maslow, 1943) the scale is theoretically driven by a "needs - satisfaction" approach and is designed to reflect four QoL dimensions: control, autonomy, self-realisation, and pleasure. Each of these dimensions is seem as fulfilling a basic social need. Measuring the extent to which needs are met is suggested to provide a more objective measure of QoL than personal assessments (e.g., life satisfaction) and therefore highly effective in capturing the complex and multidimensional nature of QoL in older adults (Higgs et al., 2003). The scale’s utility comes from its ability to apply to all individuals irrespective of circumstance or personal situation. Given the scale lacks a specific social relationships domain, its adoption as a dependent variable allows for the capture of the distinctive effects of relational activity in relation to the scale, thus enabling a nuanced exploration of social engagement impacts on QoL. Sub analysis of each of the four dimensions of the CASP-12 scale can also show the various aspects of QoL that might be enhanced or compromised through certain circumstances or characteristics. For example, the extent to which an individual's ability to influence their environment and make decisions (e.g. Control) is influenced to a greater or less extent by different LAs (Borrat-Besson et al., 2015).

Each dimension in the scale corresponds to three items. For example, “I can do the things that I want to do.” used to measure the “autonomy” dimension. Answers are given in a Likert scale with four points, from ‘never’ to ‘often’. Higher scores indicate a higher position on each dimension. The first, second, third, and sixth items are reversed in calculating an overall cumulative score. A high total score indicates a better QoL, with a total score range of 0-36.

The scale's validity and reliability in ageing research has also been well assessed in over 51 studies involving more than 520,000 participants. It has been validated in different cultural groups, including European multicultural background ageing study samples, and for older Chinese migrants in the New Zealand context (Frias-Goytia et al., 2024; Szabo et al., 2024). Analysis across the scale's 12 items for this study found a Cronbach's α =0.79 reflecting acceptable internal consistency, suggesting that the items reliably contribute to the same underlying construct.

Social Participation

The Social Participation Scale, designed to measure social connection or participation in social activities, was developed using a standardised approach (Douglas et al., 2017; Jackson et al., 2019; Langa et al., 2020; Nguyen et al., 2023). It is based on responses to a question asking participants to indicate their membership in various types of organisations, such as sports clubs, service groups, political parties, trade unions, or hobby associations. Each type of membership is assigned a single score, with the total score reflecting the breadth of social connections rather than the depth of involvement in any specific domain (e.g., belonging to multiple sports clubs). Scores were summed to produce a total ranging from 0 to 8, with higher scores indicating a greater breadth of social participation. While treating memberships equally within and across organisations does not account for the intensity or quality of participation. The lack of reference to culturally located organisations may not fully reflect the diversity of social participation in different cultural contexts (e.g. involvement in marae activity). These factors are compensated for in part through the exploration of social connectedness offered in our associated moderating variables.

Work Status

The analysis utilised Work Status as a categorical variable for analytical purposes, based on self-reported work hours. Participants were categorised as *not working* (0) if they reported 0 hours, *part-time* (1) if they worked less than 30 hours, and *full-time* (2) if they worked 30 hours or more. This approach has been widely applied in ageing research (Hedges & Gallogly, 1977; Langa et al., 2020; Petersen et al., 2018; Stovell & Besamusca, 2022). While this item is subject to recall bias and the categorisation may oversimplify the complexity of work arrangements, such as flexible work, it provides a categorical structure which is relatively straightforward for analytical purposes given that Work Status serves as a moderating variable in the analysis (i.e. how it affects or moderates the strength or direction of the relationship between other variables in the study (Nadaf & Eljo, 2024)).

Social Connectedness

In a recent synthesis of measures of social connectedness, focusing on the depth and quality of social relationships, Plackett et al. (2024) identify three groups of scales measuring social

connectedness employed in ageing research. These include those that have a strong emphasis on loneliness (e.g. UCLA Loneliness Scale and de Jong-Gierveld & van Tilburg Loneliness Scale), those that emphasis social support from family, friends and significant others (e.g. the Multidimensional Scale of Perceived Social Support) or Social Provisions Scales (SPS-10 & SPS-5) which include both social support, attachment, social integration and reassurance of worth. The measure of social connectedness adopted in this analysis was adapted from the Loneliness Scale (DJGLS) developed by de Jong-Gierveld & van Tilburg (2006). From a theoretical perspective (explored in Chapter 2) this approach suggests that loneliness and social connectedness lie along the same continuum (Lee & Robbins, 1998). Hawkley and Cacioppo (2010) suggest that loneliness can be understood as the absence of social connectedness. This approach posits that loneliness, is characterised as a negative state of social isolation, and social connectedness a positive state. Consequently, they are not entirely separate phenomena but rather interconnected points on a spectrum. Ang (2021) underscores this approach suggesting a dynamic interplay between loneliness and social connectedness.

By reverse encoding the DJGLS, the focus shifts from assessing the absence of social ties (loneliness) to evaluating the presence and strength of social bonds. This method is supported by research highlighting the duality evident in the DJGLS and the role of social integration in addressing emotional and social loneliness (Frieling et al., 2018; Holt-Lunstad et al., 2010; Santini et al. 2015). The DJGLS has been extensively validated and is known for its strong psychometric properties (with Cronbach's alpha values typically ranging from 0.80 to 0.90 for the full scale) and application across diverse cultural contexts (Giraldo-Rodríguez et al., 2023; Koğar & Koğar, 2023; Penning-Rowsell et al., 2013; Plackett & Hulin, 2024). The DJGLS has also been shown to have strong convergent validity with other measures of loneliness and social support confirming its reliability and effectiveness in assessing social connectedness (Plackett & Hulin 2024).

The DJGLS consists of six items. These items are divided into two domains:

Emotional Loneliness: Represented by items 1, 2, and 3, these focus on feelings of emotional isolation, such as “I experience a general sense of emptiness.”

Social Loneliness: Represented by items 4, 5, and 6, these assess the availability of meaningful social relationships, such as “There are enough people I feel close to.”

Each item is scored as follows:

- For items 1, 5, and 6, responses of "Yes" or "More or less" receive a score of 1, while "No" is scored as 0.

- For items 2, 3, and 4, "Yes" is scored as 0, whereas "More or less" or "No" are assigned a score of 1.

The scores are then totalled, resulting in a final score ranging from 0 to 6. Higher scores signify lower levels of social connectedness. Analysis across the scale's 6 items (while lower than reported above) found a Cronbach's α = .75 reflecting acceptable internal consistency, and overall reliably for this measure across this sample.

Disability or Ill Health

Disability was defined using one question adopted from the SF-12v2, a well-established measure with strong psychometric properties (Cheak-Zamora et al., 2009; Shah & Brown, 2020). The item employed asked "Does your health now limit you in these activities? If so, how much?" Participants were asked to answer about the following two activities: (1) Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf; (2) Climbing several flights of stairs. Those that answered "Yes, limited a lot" were coded as: (1), any other answers: (0). Participants who were coded as 1 for any one activity were categorised as having a disability that limited their physical activity. The item emphasises physical limitations as opposed to cognitive or emotional aspects of disability. Given the limitations, the measure identifies those in the sample who may require home care assistance[8] and is not dissimilar to treatment in other ageing research (Banks et al., 2023).

Demographic Variables

Age

In this research, age serves dual roles as both a moderating variable and a control variable. Considering the critical influence of current policy frameworks regarding superannuation accessibility beginning at age 65, age recorded at T1 was divided into three distinct categories: individuals under 65 years, those aged 65 to 74 years, and individuals aged 75 years and older (further age groupings beyond age 75 were too small for reliable analysis, based on the G*Power assessment presented further down). The consequence of this approach is that at T2, respondents will be two years older. The importance of considering the distinct experiences of the Young-Old, Old-Old and Oldest-Old groupings was discussed in Chapter's 1 and 3 above.

Gender

Gender was originally recorded as (1) male, (2) female, and (3) gender diverse. After data screening only one gender-diverse participant remained and was excluded from further analysis.

Ethnicity

Ethnicity was classified into two groups non-Māori (0), and Māori (1). Initially attempts were made to explore results for other minority ethnic groups, but sample sizes proved insufficient to

allow such exploration (see Table 3). Māori are significantly over-represented in the resultant study population accounting for 17.3% of respondents compared with only 9.2% of the New Zealand population aged 65 and over (StatsNZ, 2023). The decision was taken not to apply resultant weighting in outcomes as the study aimed to preserve the natural distribution of the sample. This approach is often used in studies where the over-representation of a subgroup is intentional to ensure adequate statistical power for subgroup analyses (Kolenikov, 2016). The implication of this decision has been tested to see whether there is material difference in outcomes for Māori compared with those for New Zealand European. Applying One-way ANOVA analysis there were found to be no significant group differences, although there were slight differences in mean scores between these two ethnic groups in terms of living arrangements, Social Participation, Social Connectedness, QoL, Age, Disability or Work status. Iterations of the model equally adopts ethnicity as a control variable.

Income

Income was measured using the NZ Census's household income question and was collected on the basis of annual household income. Income was translated into a continuous variable from 1 to 9, with higher scores indicating a higher standard of economic living. Encoding range (Missing=1, Loss & $0=2, $1-$25000=3, $25001-$50000=4, $50001-$70000=5, $70001-$100000=6, $100001-$150000=7, $150001-$200000=8, $2000001+=9).

Control Variables

The control variables used in the regression modelling included:

Age: (0=55-64, 1=65-74, 2=75+);

Gender: (0=male, 1=female);

Ethnicity: (0= Māori, 1 = non-Māori; including New Zealand Europeans, Asians, Pacific, and other ethnic groups);

Disability: (0=non-disabled, 1=disabled);

Income: (Missing = 1, Loss & $0 = 2, $1-$25,000 = 3, $25,001-$50,000 = 4, $50,001-$70,000 = 5, $70,001-$100,000 = 6, $100,001-$150,000 = 7, $150,001-$200,000 = 8, $200,0001+ = 9).

Participant Exclusion and Imputation of Missing Data

A systematic set of approaches was adopted to cater for missing or incorrect item responses, either due to coding error or respondent failure. The approaches adopted sought to achieve a balance between minimising bias, retaining statistical power, and preserving the sample size where feasible. In respect of items related to age and gender there was no missing data in the dataset.

Variables such as living arrangement, work status, and ethnicity, which are categorical in nature and cannot be replaced with means were carefully addressed due to the challenges of

achieving reliable imputations. The inability to accurately infer true values based on other attributes from other items limits the effectiveness of imputation for these variables (Allison, 2009). Consequently, cases with missing or partially available data for these variables were processed using listwise deletion. While listwise deletion can introduce bias and reduce statistical power, these effects are considered negligible when the proportion of missing data is small, and the sample size is sufficiently large (Graham, 2009).

Item responses were then checked for outliers one by one, and only one respondent who reported working 168 hours per week was found, and this participant was deleted in list.

Scale Treatment

Given their criticality in the study, participants whose responses to the CASP-12, the Loneliness Scale, and the Social Engagement Scale exhibited uniform response bias were excluded (Szabó et al., 2024). This was done to address concerns about response bias, such as inattentiveness or a lack of genuine engagement with these survey questions, ensuring that the data reflected meaningful and thoughtful participant responses, thus enhancing the reliability and validity of its findings.

To address missing data across these items Little's MCAR test was employed, which yielded statistically significant results. This, along with significance tests indicating that missingness was correlated with other variables, indicated that the data were not Missing Completely at Random (MCAR). Instead, the data were determined to be Missing at Random (MAR), meaning the likelihood of missingness depended on other observed variables (Seaman et al., 2013). Based on this assumption, the Expectation Maximization (EM) algorithm was employed to impute missing data, given that this method is seen as appropriate for large sample sizes and MAR scenarios.

Including participants who responded to only a small number of items on the three key scales - CASP-12, the Loneliness Scale, and the Social Engagement Scale would result in unreliable imputations it was acknowledged that this was problematic when using EM, as limited information from incomplete responses reduces the accuracy of interpolated values (Do & Batzoglou, 2008). To ensure data quality, a threshold was set in which only participants who completed at least 70% of the items across these three key variables to be included in the analysis. Consequently, cases with a response rate below 30% for any of these scales were excluded.

G*Power Assessment

To determine the minimum cell size required for the regression analysis employed in this study, a G*Power calculation was conducted. For a two-tailed linear multiple regression model with a small effect size and a statistical power of 80%, the analysis indicated that the smallest group size should

be at least 170 respondents in order to ensures sufficient power to detect meaningful effects while minimising the risk of Type II errors[11].

[11] A Type II error occurs when a statistical test fails to reject a false null hypothesis, effectively missing a true effect.

Chapter 6: Results

Sample characteristics

Table 3 describes the characteristics of all participants at T1, including age, gender, living arrangement, work status, disability, ethnicity, and income. As shown in the table, participants ranged in age from 55 to 91 years, with a mean age of 65.21 years (SD = 6.59). More than half of the participants were women (54.0%), and the vast majority of participants did not report disability or ill-health (90.9%). Nearly half of the participants were full-time employees (48.0%), with a similar percentage of participants not in work (26.8%) or in part-time work (24.6%). Of the four-living arrangements, mirroring Census results described in Chapter 1, the highest percentage of participants were living with their partner (71.5%). The percentage of those living alone (16.8%) exceeds the percentage of those living with other family members without partner (7.4%). The majority of participants were New Zealand Europeans (75.8%), followed by Māori (17.3%), others (4.3%), and Pacific (2.4%) and Asians (0.3%). In terms of income, the percentage of participants with no income or recorded a loss of income was low (1.1%), with more than half of participants earning more than $50,000 per year (53.9%) and nearly one in 10 earning less than $25,000 per year.

Causal Relationship Between Living Arrangement and QoL

Hypothesis 1a: Older adults Living Arrangements (LA) (T1) will result in significant differences in their Quality of Life (QoL) (T2) two years later. Older adults living alone will have poorer overall QoL than those living with a partner or with family.

A univariate general linear model was developed to analyse the relationship between the LA in 2018 and the QoL in 2020, applying control variables. As shown in Table 4, the statistical effect of the corrected model was significant (F =42.418, p <.001), and there were significant differences between groups across LA types (F =7.794, p <.001). As hypothesised, the mean for CASP-12 for those living with a partner was significantly higher than that for all other groups (mean =29.00, SD =.13, 95% CI [28.74, 29.25]), and the mean of CASP-12 for those living alone was the lowest (mean =27.60, SD =.53, 95% CI [27.07, 28.14]). The mean of CASP-12 of those living with family ranked third (mean =28.03, SD =.41, 95% CI [27.23, 28.83]), while the mean CASP-12 result for those living with others surprisingly was second (mean =28.79, SD =.529, 95% CI [27.75, 29.82]).

Table 3

Sample Characteristics Description of the Participants

Variables	Characteristics		Variables	Characteristics	
	N	%		N	%
Age in years			**Ethnicity**		
55-64	1103	53.00	NZ European	1577	75.80
65-74	776	37.30	Māori	359	17.30
75+	202	9.70	Pacific	49	2.40
Gender			Asian	6	0.30
Male	953	45.80	Other	90	4.30
Female	1127	54.20	Non-Māori	1722	82.70
Gender diverse	1	0.00			
Work status			**Income**		
Non-work	558	26.80	Missing	385	18.70
Part-time	511	24.60	Loss and $0	27	1.10
Full-time	1012	48.60	$1-$25000	177	8.50
Living arrangement			$25001-$50000	370	17.80
Live alone	349	16.80	$50001-$70000	233	11.20
Live with partner	1487	71.50	$70001-$100000	311	14.90
Live with family no partner	155	7.40	$100001-$150000	313	15.00
Live with others	90	4.30	$150001-$200000	149	7.20
Disability			$200001+	116	5.60
Not disability	1891	90.90			
Disability	190	9.10			

Note. N = 2081. Mean of age = 65.21 SD= 6.52.

Table 4

CASP-12 as Depended Variable in the Univariate General Linear Model

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8448.57	8	1056.07	42.42	**<.001**
Intercept	412699.17	1	412699.17	16576.31	**<.001**
Living Arrangement (Time1)	582.16	3	194.05	7.79	**<.001**
Gender	311.95	1	311.94	12.53	**<.001**
Disability	5296.00	1	5296.00	212.72	**<.001**
Ethnicity	1.51	1	1.51	.06	.805
Income	1119.56	1	1119.56	44.97	**<.001**
Age	247.54	1	247.54	9.94	**.002**

Hypothesis 1a was retested using a dummy variable linear regression approach to confirm the above finding. LA was dummy coded, and three dummy variables living alone [LAA], living with family no partner [LAF], living with others [LAO] were generated. Living with partner [LAP] was used as the reference category.

The histogram of the residuals (Figure 1) shows that the distribution of the residuals is close to the distribution of the normal curve. Combined with the normal P-P plot analysis (Figure 1), the distribution of the values approximates a straight line. Consequently, the regression equation is acceptably predictable. As shown in Table 5 the CASP-12 score, for Live alone, is 1.40 lower than that of Live with partner and is statistically significant (p <.001). The CASP-12 score of Live with family no partner is .97 lower than that of Live with partner (p =.025). The CASP score of Live with others is .21 lower than that of Live with partner, although is not statistically significant. Hypothesis 1a is partially supported. The QoL of those living with partner was significantly higher than that for those living alone, and the QoL of living with family was higher than living alone but lower than living with a partner.

Sub analysis for each of the dimensions within CASP-12 (at T2) are shown in Figure 2. Across each LA type, differences in means for each dimension were found to be statistically significant (p <.001). With higher scores across all dimensions of Control, Autonomy, Pleasure and Self-realisation reported for those living with a partner. Those living alone rated each dimension poorly, except for Autonomy, which was rated higher, although still behind that for those living with a partner. Living with family also rated more poorly across each dimension although recorded a

higher rating in respect of the Pleasure dimensions. In the case of those living with others, generally dimensions rated well with the exception of Control which was rated poorly.

In both models, Income was shown to play a significant effect and was positively related with QoL. In both models Ethnicity (Māori/non-Māori) was found not to have a significant effect on QoL.

Table 5

Dummy linear regression model results for living arrangements and QoL

Predictor	Dependent variable: Quality of life (CASP) (N = 2081)				
	b	Standard error	Standardised coefficient beta	t	p
Constant	37.053	.190		194.986	**<.001**
Living alone	-1.393	.304	-.097	-4.575	**<.001**
Living with family	-.968	.431	-.047	-2.247	**.025**
Living with others	-.207	.546	-.008	-.379	.704
Age	.703	.223	.065	3.153	**.002**
Ethnicity	-.072	.291	-.005	-.246	.805
Income	.313	.047	.141	6.706	**<.001**
Gender	-.795	.225	-.074	-3.540	**<.001**
Disability	-5.621	.385	-.301	-14.585	**<.001**

Figure 1

CASP-12 as Dependent Variable, Histogram of Dummy linear Regression and Normal P-P Plot of Regression Standardised Residual

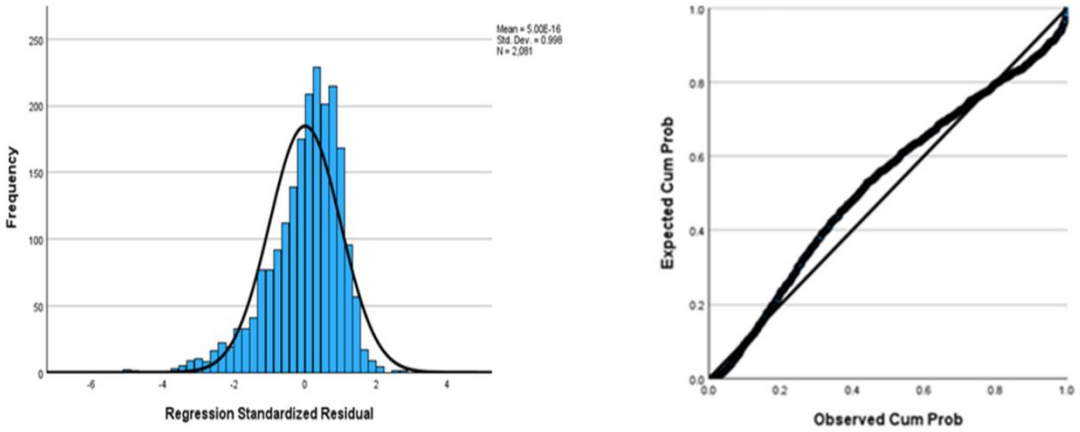
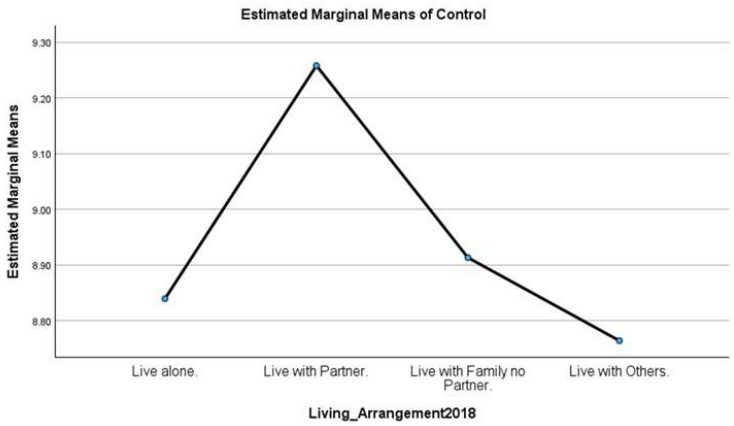
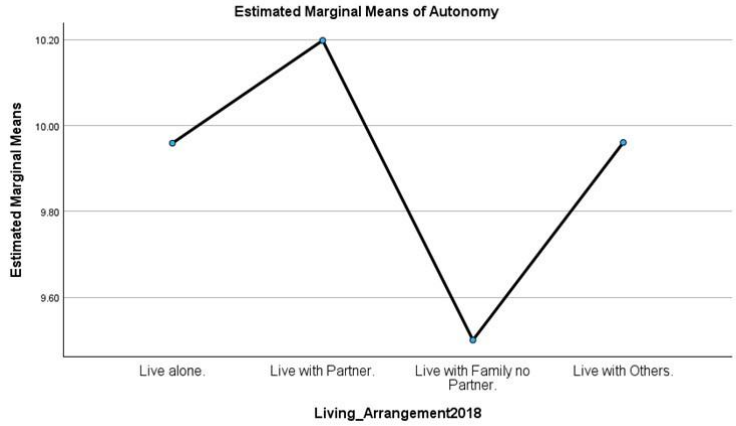
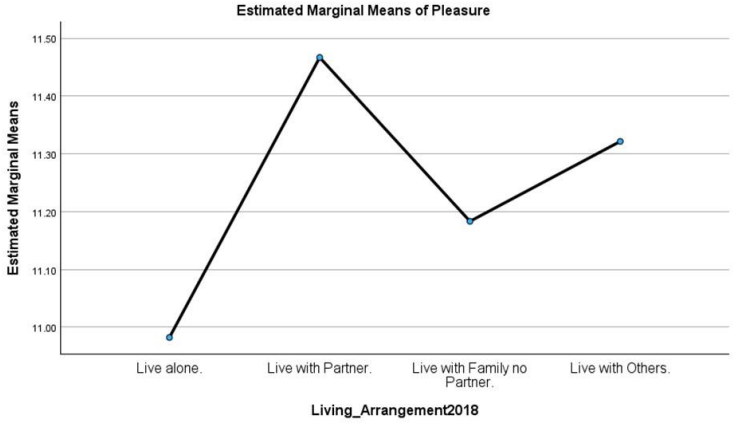


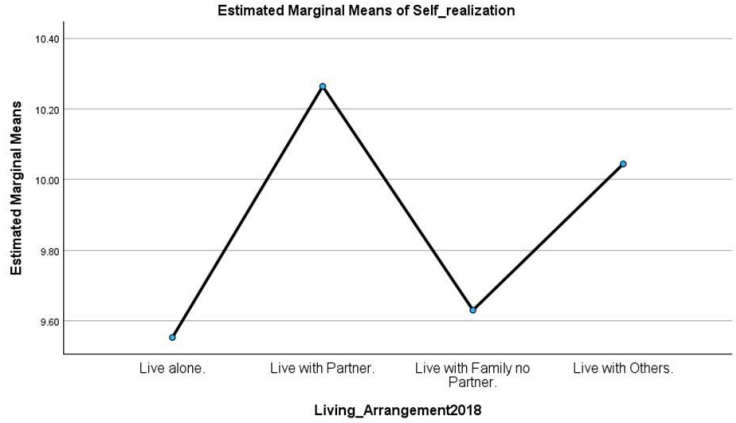
Figure 2

Subcomponent elements of CASP-12 by Living Arrangement









Age, Gender, and Disability as Moderators

Hypotheses 1b, 1c, and 1e assume that age, gender, and disability will have moderating effects on the causal relationship between LA and QoL respectively. Hypothesis testing was undertaken using hierarchical regression employing all control variables. Three dummy variables for LAA, LAF and LAO were created and subsequently multiplied separately by Age, Gender and Disability. The interaction variables were added to the hierarchical virtual linear model in turn. The result is shown in Table 6.

Table 6

Dummy linear regression contains moderating variables Age, Gender and Disability

Predictor	Dependent variable: Quality of life (CASP) (N = 2081)					
	b	Standard error	SC beta	t	*p*	VIF
Age	.53	.26	.05	2.03	**.042**	1.68
Living alone (LAA)* age	-.23	.42	-.03	-.55	.585	2.75
Living with family (LAF)*age	1.50	.63	.12	2.39	**.017**	1.68
Living with others (LAO)*age	.65	.81	.04	.81	.420	2.17
Gender	-.58	.26	-.05	-2.22	**.026**	1.43
Living alone (LAA)*gender	-.56	.62	-.02	-.89	.374	1.73
Living with family (LAF)*gender	-1.70	.90	-.05	-1.89	.059	1.56
Living with others (LAO)*gender	-.27	1.10	-.01	-.25	.805	1.80
Disability	-5.55	.52	-.30	-10.60	**<.001**	1.90
Living alone (LAA)*disability	-.29	.58	-.01	-.51	.611	1.66
Living with others (LAO)*disability	-.95	.91	-.03	-1.04	.297	1.38
Living with family (LAF) *disability	-.62	.73	-.02	-.84	.399	1.49

Note. SC beta = standardised coefficient beta. This table combines the moderating variables sections of the three models. Each independent model included predictor variables and control variables as Table 4 and Table 5.

Age

Age was found to have a positive effect on QoL. As shown in Table 7, regardless of whether the model contains control variables, the 65-74 age group report the highest QoL compared with either of the other two groupings. It is notable that the presence of disability increases with age. After adding the control variables (which include disability/ill-health), the mean QoL of the 74+ group was higher than that of the 55-64 age group.

As shown in Figure 3, older respondents living with their families in the 65-74 and 75+ groups recorded a higher QoL than those living with their partners. Conversely, while the three groups had

similar outcomes in terms of living alone and with their partners, those living with their families aged 55-64 reported a significantly lower QoL than those living alone, and only slightly improved when living with others.

Table 7

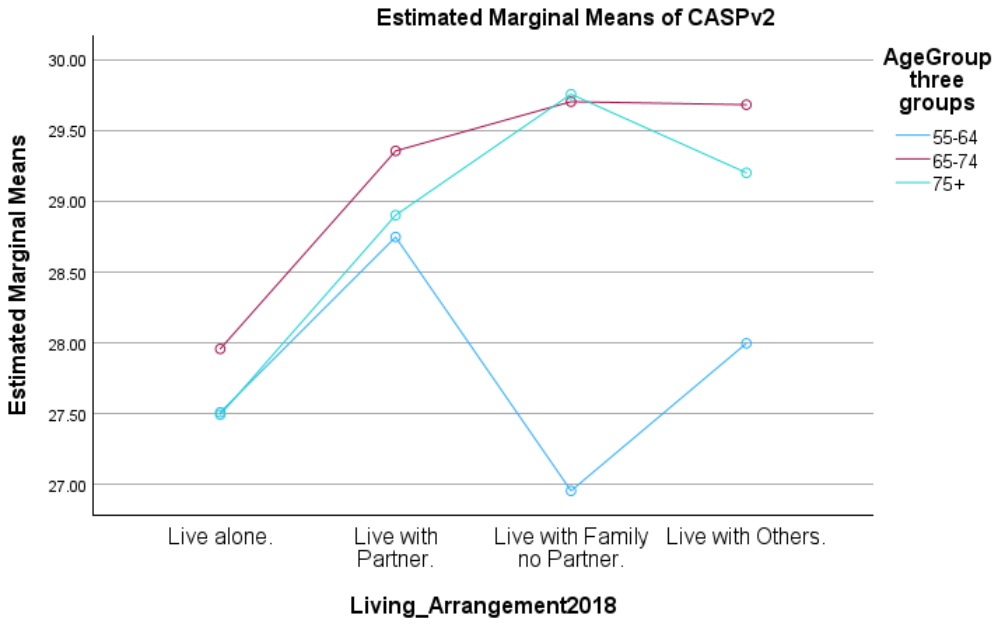
QoL and Percentage of disability for Different Age Groups with and Without Control Variables

Variables	55-64	65-74	75+
Percentage of disability	7.60%	9.10%	17.30%
Mean of QoL without control variables	28.54	29.11	27.79
Mean of QoL with control variables	28.38	29.13	28.64

Note. Control variables are including disability, income, gender, ethnicity.

Figure 3

*CASP-12 Mean for ANOVA with Age*LA*



Reinforcing this proposition the model found the interaction variables of Age, R^2 =.144, to be greater than R^2 =.141 without interaction variables (To illustrate model differences, R^2 retains three decimal places. The rest of the R^2 is the same). However, after adding the interaction variables the Sig. F Change =.051 >.050. This result show that Age has a certain moderating effect on the model, but the moderating effect of Age on each group might be inconsistent. As shown in Table 6, only the Living with family*Age is statistically significant (Unstandardized b = 1.50, *p* = .017, and VIF= 1.68 which means no serious multicollinearity problem), other interactive variables were not statistically significant. Therefore, Age only played a moderating role at the Living with Family level.

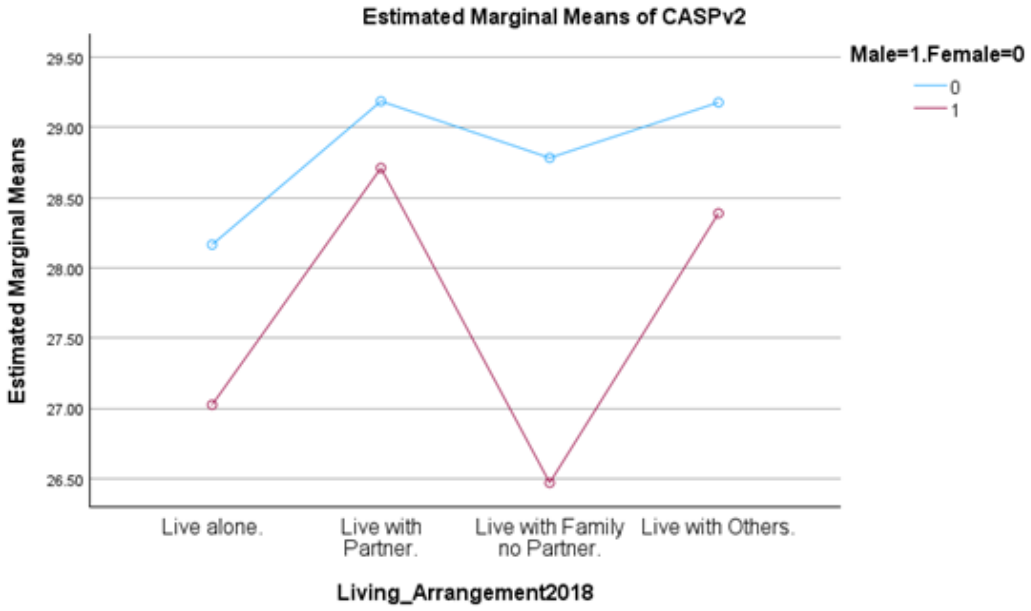
Gender

Gender was also found to be significantly associated with QoL, with men reporting lower overall satisfaction with their QoL than women (*p* =.026). Men living alone were found to have a very much lower QoL than women on their own. Equally men who were living with family reported their QoL to be substantially lower than that for those who lived alone. By contrast women living with their families reported a marked lift in their QoL and very similar to the QoL of those living with a partner.

Adding the interaction variables of Gender, R^2 =.142 was greater than that of the model without the interaction variables R^2 =.141. However, this change was not significant, Sig. F Change = .260 >.050. As shown in Table 4, no variables were found to be statistically significant. Therefore, Gender was not a moderating variable. The line chart of the CASP-12 mean for ANOVA with gender as a moderator is shown in Figure 4.

Figure 4

*CASP-12 mean for ANOVA with Gender*LA*



Disability/Ill-Health

The model identifies Disability as having a significant effect on QoL (Unstandardised b = -5.55, *p* <.001), and can be seen here as one of the main risks to QoL for this population. As hypothesised the presence of a disability significantly lowers QoL for those living alone, but the presence of disability proportionately lowers QoL across each LA type (Figure 5). Disability is not found to moderate the causal relationship between LA and QoL. After adding the interaction variables for Disability, there was no change in R^2 = .141, Sig. F Change = .980 > .050. The line chart of the CASP-12 mean for ANOVA with Disability*LA is shown in Figure5.

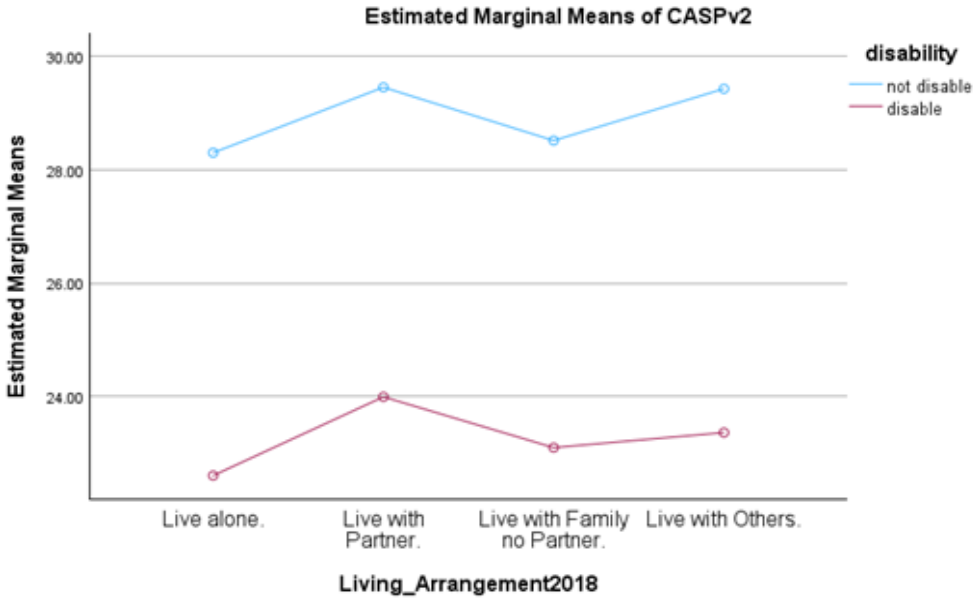
Therefore, hypotheses 1b was partially supported, and hypothesis 1c and 1e were not supported.

Hypothesis 1d: Older adults living with a disability or ill-health will report lower levels of social participation and social connectedness compared to those without disabilities.

Disability negatively correlated with social participation (Pearson *r*=-.51, *p*=.21), and with social connectedness (Pearson *r*=-.16, *p*< .001). Hypothesis 1d was supported.

Figure 5

*CASP-12 mean for ANOVA with Disability*LA.*



Change of Living Arrangement After Two Years

Hypothesis 2 proposed that changes in living arrangements in T2 (2020) would moderate the causal relationship between living arrangements in T1 (2018) and QoL. Given that both the independent variable (2018 living arrangements) and the moderating variable (2020 living arrangements) are categorical, the hypothesis was tested using a General Linear Model. As shown in Table 8, individuals who lived alone in 2018 but no longer lived alone two years later showed an increase in their mean CASP-12 score. Conversely, respondents who lived with a partner in 2018 but transitioned to living alone after two years experienced a decrease in their mean CASP-12 score. The model was not statistically significant (F = 1.43, *p* = .124), and the interaction variables were also not statistically significant (*p* = .633). As a result, these observed differences may not represent actual effects. Consequently, the change in living arrangements over two years did not moderate the relationship between LA and QoL. Hypothesis 2 was therefore not supported.

Table 8

Comparison of Living Arrangements Change in Two Years with Quality of Life Mean.

				95% Confidence Interval	
Living arrangement 2018	living arrangement 2020	Mean	Std. Error	Lower Bound	Upper Bound
living alone	living alone	24.33	.18	23.98	24.68
	living with partner	24.54	.86	22.85	26.23
	living with family	24.61	.71	23.22	26.01
	Living with others	27.35	1.27	24.86	29.83
living with partner	Living alone	24.21	.54	23.15	25.27
	Living with partner	24.97	.08	24.81	25.13
	Living with family	25.00	.98	23.07	26.93
	Living with others	24.00	1.39	21.28	26.73

Work Status as a Moderator

Hypothesis 3a: Work status will have a moderating effect on the causal relationship between LAs and QoL. Employing a General Linear Model to test Hypothesis 3 which argued that work status would moderate the causal relationship between LA and QoL. As indicated in Table 9, LA*work status was not statistically significant (p= .388). Consequently, Hypothesis 3a was not supported.

Hypothesis 3b: Involvement in work will positively impact QoL for older adults. Work status was found to be associated directly with QoL. The mean CASP-12 score was highest for the full-time work group (Mean = 28.98, SD = 5.32, 95% CI [28.65, 28.92]), followed closely by the part-time work group (Mean = 28.87, SD = 5.10, 95% CI [28.43, 29.32]). The lowest mean CASP-12 score was observed in the non-working group (Mean = 27.97, SD = 5.65, 95% CI [27.50, 28.44]). The results of the ANOVA indicated a statistically significant difference between groups, F (2, 2078) = 6.71, p=. 001. Hypothesis 3b was supported.

Hypothesis 3c: Work status will have a positive correlation with social connectedness. Correlation analysis was then conducted to explore the associations between work status, social participation, and social connectedness. The results indicated a weak negative correlation between work status and social participation (Spearman's r=-.14, p< .001). Additionally, the analysis revealed that the correlation between work status and social connectedness was not statistically significant (Spearman's r= .01 p=.767). Even if the original working hours are used, the results remain the same. Hypothesis 3c was not supported.

Table 9

Analysis of Variance: The Effects of Living Arrangements, Work Status, and Other Factors on Quality of Life

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8648.63	16	540.54	21.71	<.001
Intercept	195827.09	1	195827.09	7865.65	<.001
LA	590.94	3	196.98	7.91	<.001
Work status	83.56	2	41.78	1.68	.187
LA * working status	157.52	6	26.25	1.06	.388
Income	949.30	1	949.30	38.13	<.001
Ethnicity	1.99	1	1.99	.08	.778
Disability	5083.39	1	5083.39	204.18	<.001
Gender	310.86	1	310.86	12.49	<.001
AGE	269.24	1	269.24	10.81	.001

Note. LA= Time1 living arrangements.

Social Participation and Social Connectedness as Moderators

Hypothesis 4b: Social participation will have a positive correlation with social connectedness. Prior to examining their moderating effects, the correlation individually between social participation and social connectedness at T1 with the CASP-12 at T2 were found to be significant (for social participation with CASP-12 2-tailed Pearson`s $r$ =.11, $p$ <.001; social connectedness Pearson`s r=.52, p <.001). Specifically, social connectedness (at T1) emerged as particularly influential in its association with QoL outcomes. The association of social participation by contrast was relatively weak. In addition, a weak positive correlation was found between social participation and social connectedness (Pearson`s r =.08, p <.001). Hypothesis 4b was supported.

Hypothesis 4a proposed that social participation would moderate the causal relationship between LA and QoL and Hypothesis 5a and 5b suggested that social connectedness would also moderate this relationship, with its moderating effect expected to be stronger than that of social participation.

To test these hypotheses, hierarchical regression analysis was performed, and the models incorporating the two moderating variables were compared. For the purpose of comparison, the social participation and social connectedness scores were standardised into z-scores. These transformed z-scores were then used to create interaction variables in combination with the dummy variables (similar to retesting for Hypothesis 1 described above) representing our three LA's: LAA, LAF, LAO. With the inclusion of social participation and the three interaction variables,

the model's R^2 increased to .147, surpassing the previous model's R^2 = .141. The Sig. F Change statistic for the model, incorporating the moderator variables, was significant (p < .004). However, as shown in Table 10, among the variables added, only the social participation variable was statistically significant (Unstandardised b = 0.45, p < 0.001, VIF = 1.51). None of the other interaction variables achieved statistical significance. This suggests that while social participation contributes meaningfully to the model, the additional interaction variables do not significantly enhance the explanatory power of the relationship between LA and QoL.

With the inclusion of social connectedness and three interaction variables, the model's R^2 increased to .348, compared to the model without interaction variables, which had an R^2 of .141. Both models demonstrated statistically significant Sig. F Change values (p < 0.001).

Among the interaction variables, only the coefficient for the interaction between social connectedness and living alone (social connectedness * Living Alone) was statistically significant (Unstandardised b = 0.75, p = 0.002, VIF = 1.37).

Table 10

A Regression Result that Includes the Interaction Variables of Social Participant and Social Connectedness Times Dummy Variables.

Predictor	Dependent variable: QoL (CASP-12) (N = 2081)					
	b	Standard error	Standardised coefficient beta	t	*p*	VIF
SP z-score	.45	.13	.08	3.38	**<.001**	1.51
SP z-score*LAA	.02	.29	.00	.05	.958	1.28
SP z-score*LAF	-.19	.40	-.01	-.48	.634	1.15
SP z-score*LAO	-.34	.53	-.01	-.64	.522	1.10
SC z-score	2.39	.12	.44	19.81	**<.001**	1.59
SC z-score*LAA	.75	.25	.06	3.06	**.002**	1.37
SC z-score*LAF	.06	.33	.00	.19	.849	1.21
SC z-score*LAO	.57	.49	.02	1.15	.250	1.07

Note. SP z-score= Social participation z-score, SC z-score= social connectedness z-score. QoL= quality of life. LAA= Living alone, LAF= Living with family, LAO= Living with others.

As shown in Table 10, when all other variables remain constant, an increase of one unit in the social connectedness z-score is associated with a .75-point higher CASP-12 score for individuals living alone compared to those living with a partner. As a consequence, these results indicate that both social participation and social connectedness play distinct roles in influencing QoL, particularly for individuals living alone. Social Participation significantly contributes to QoL overall

(Unstandardized b= .45, $p < .001$), however, it does not show additional significance in moderating the relationship between LA and QoL. This suggests that while engaging in social activities generally improves QoL, its impact may not specifically address the challenges of living alone. Equally it doesn't detract or add to the benefits of other LA forms on QoL.

Social Connectedness demonstrates a stronger influence, particularly for individuals living alone. The interaction between social connectedness and living alone is statistically significant (Unstandardised b= .75, $p = .002$), highlighting that higher levels of social connectedness significantly enhance QoL for these respondents. The $R^2 = .348$ representing a particularly high model fit in terms of its influence on QoL. This suggests that social connectedness equally offers vital emotional or relational support that offsets the potential negative impact of living alone.

Therefore, Hypothesis 4a was not supported. Hypothesis 5a was partially supported and Hypothesis 5b was supported.

Chapter 7: Discussion of Findings and Implications

The findings presented in Chapter 6 highlight the crucial impact of living arrangements (LA) on the quality of life (QoL) of older adults, shedding light on the complex relationships between where and with whom older adults live, and their overall wellbeing. The findings underscore the significant influence that living with a partner has on QoL, while living alone results in an overall poorer QoL. Those living with family experienced a higher QoL compared to those living alone, and individuals living with others reported the second-highest perceived QoL. These results emphasise the importance of LA and through these, the strength of household relationships in shaping the QoL for older adults. Additionally, the analysis found that age significantly altered the relationship between LA and QoL for those living with family, while social connectedness had a significant impact on this relationship for those living alone. Conversely, while disability, gender, work status, and social participation significantly influence QoL individually, they do not modify the strength of the underlying causal relationship between LA and QoL.

The Role of Intergenerational Living in Shaping Quality of Life

As highlighted in Chapter 1, intergenerational households account for approximately 11% of the residential arrangements for New Zealanders aged 65 and older and are the fastest-growing household form among this group, particularly among the Pacific and Asian community. The analysis presented in Chapter 5 reveals a nuanced relationship between living with family and QoL for older adults. The findings suggest that older individuals living with their family generally experience greater QoL compared to those living alone. Chapter 3 reviewed literature indicating that this LA form provided emotional support, a sense of belonging, protection against loneliness and social isolation, and access to instrumental support such as assistance with daily activities, transportation, or managing health needs (Cacioppo & Cacioppo, 2014; Doran et al., 2011; Holt-Lunstad et al., 2015; Victor & Bowling, 2012). This study revealed that the advantages of living with family are more pronounced among women and individuals aged 65 and older, highlighting the significant protective benefits, including familial support and emotional attachment that is derived from residing with family members (Berkman et al., 2000; Pinquart & Sörensen, 2003).

Living with Family: Age and Gender Differences

The study indicates that individuals aged 55-64 experience a lower quality of life (QoL) when residing with family compared to living independently. This observation can be interpreted in several ways. It may signify an early dependence on family members due to loss of a partner, disability, housing or financial constraints. Conversely, it might indicate a situation where other family members rely on the individual for financial support, caregiving, and housing, thereby depleting their resources and reducing their QoL. In both cases the findings from this study indicate that, for the young old, such LA limit personal agency and autonomy, or the degree of independence from external control,

and that family dynamics at this stage of life can place a limit on self-sufficiency (Moen et al., 2016). While some researchers also suggest that living alone for this group may also derive greater "control", (Wills, 1985), the CASP-12 sub-dimension analysis would suggest that control is relatively low across both living circumstances, as is the opportunities for self-realisation or capacity of individuals to achieve goals or aspirations.

The analysis from this study highlights that women gain greater benefits from intergenerational living compared to men. However, gender was not identified as a moderating factor (p = .055), indicating that the association across different living arrangements does not significantly alter the differing experiences of men and women within these contexts. This finding aligns with existing literature highlighting the significant emotional and relational benefits for older women who reside with their family (Hope et al., 2017). This finding may reflect generational factors, particularly among this study cohort, and is likely influenced by the social roles they assume within families. Women often have a greater focus on family caregiving, which may contribute to a stronger sense of satisfaction and self-worth when residing with their families (Silverstein & Bengtson, 1997; Umberson, 1992). Equally women are suggested to maintain stronger and more emotionally intimate relationships with their family members, especially as they age (Bengtson & Achenbaum, 1993; Rosenberg et al., 2015).

Men living with family reported a substantially lower QoL than men living alone, a finding that suggests living in an extended family arrangement may be more challenging for men, possibly due to a perceived loss of independence and autonomy, difficulty in adjusting to role dependency and potential role conflict (Harris & Hays, 2008). Negative social interactions for men, particularly those arising from family conflicts, can diminish self-esteem and hinder the fulfilment of personal goals, thereby lowering self-realisation and pleasure (Umberson & Montez, 2010). These findings support the idea that traditional gender roles, which emphasise male independence and self-sufficiency, may lead to psychological discomfort when older men need caregiving support (Arber & Ginn, 1995; Wills, 1985; Zimmerman et al., 2003).

These findings may change as intergenerational values and socio-cultural norms shift. Increased labour force participation among women and the growing role of men in caregiving are key factors. Changing demographics, such as the rising proportion of older Asian and Pacific populations, may also play a role. These groups often have traditional norms of filial piety and extended family living and are characterised by stronger familial and collectivist orientations (Pinquart & Sörensen, 2003). Because of the limitations on sample size the analysis presented in this thesis has not been able to delve into potential differences in ethnic group outcomes and suggests that future research must account for these socio-cultural changes to accurately capture the nuances of ageing in Aotearoa.

The Hidden Crisis of Older Adults Living Alone

The situation for older adults living alone in Aotearoa, is particularly concerning. In the analysis presented in Chapter 1, those over 65 years living alone accounted for a quarter of all living arrangements and in this study population 17% of respondents. Census data has also suggested this to be a growing population group, increasing by 25% over the past decade. As outlined in Chapter 1, New Zealand and other policymakers advocate for ageing in place, the ability of older adults to live independently in their own homes and communities as they age, to enhance autonomy, preserve existing social networks, and reduce the stress and disruption associated with relocating to other care arrangements. From a policy standpoint, ageing in place is regarded as a cost-effective alternative to institutional care, potentially alleviating pressure on aged care facilities and public health systems (Bigby, 2012). The findings of this thesis, supported by other research in New Zealand, underscore the significant risks that living alone poses for the QoL of these individuals (Jamieson et al., 2018). This study found that the life quality of men and those with a disability living alone (discussed below) is substantially poorer than that recorded for all other living arrangements. Results from Chapter 5 suggest that while autonomy may be greater for those living alone compared to those living with family members, it is not sufficient on its own to sustain a high QoL compared to other living arrangements. This holds true regardless of gender, age, income, work status, or ethnicity. The assumption that individuals living alone have greater control over their circumstances, engage in meaningful activities, and access strong social supports does not hold up. In reality, older individuals living alone generally report lower perceptions of control, pleasure, and opportunities for self-realisation. For men lower QoL compared with women among those living alone reinforces research findings from other studies that suggest that men often face greater challenges in relation to establishing and maintaining social connections as they age, particularly so after the loss of a partner (Wenger, 2001).

Disability and Living Arrangements: The Need for Comprehensive Support

The study revealed disability and ill-health as having a significant negative impact on QoL across all living arrangements, showing that no arrangement could fully mitigate its adverse effects. Disabilities may restrict opportunities for social interaction and access to broader support systems beyond the immediate living environment (Borrat-Besson, 2015; González-Blanch et al., 2018).

However, the relative benefits of certain living arrangements still hold. For instance, individuals with disabilities who live with a partner or family experienced slightly better QoL outcomes compared to those living alone. This suggests that practical and daily living support, along with social and emotional support within family or partnered living arrangements, can reduce the negative effects of disability, though not entirely. The results indicate particularly dire outcomes for those living alone with a disability.

Although not directly explored in this analysis, given the access criteria (described in Chapter 6), it is likely that older adults with a disability or ill-health who live alone are recipients of Te Whatu Ora home and community support services (HCSS). This service includes regular social engagement from care providers. However, these results clearly indicate that, if it is present, this form of engagement is insufficient to mitigate the negative impacts on QoL associated with the dual challenges of disability and living alone. This aligns with other research suggesting that while formal caregiving may help with physical tasks, it does not provide the level of support needed to counteract the broader consequences of social isolation and the limitations imposed by disability (Beresford, 2019; Cacioppo et al., 2015; Wolff & Kasper, 2006).

The Role of Social Engagement, Work and Community in Quality of Life

Social Activity theory (Chapters 2), and an extensive review of the literature (Chapter 3), suggest that engaging older adults in work or social activities plays a critical role in enhancing their QoL and offsetting the negative effects of living alone. Extending working life or transitioning to social or volunteer activities post-retirement has been identified as a key protective factor, providing older adults with opportunities to maintain and expand their social networks. These networks are suggested to offer emotional, social, and practical support, all of which are suggested to improve well-being and provide for a higher QoL (Desivilya & Yassour-Borochowitz, 2008; Kelly et al., 2017; Pinquart & Sörensen, 2000). As explored in the literature, social participation and volunteering are not only thought to facilitate meaningful interactions but also foster a sense of purpose and community integration, which are viewed as essential for mitigating loneliness and isolation - key factors that negatively impact QoL for older adults (Cattan et al., 2005; Healy et al., 2019).

In the present study, both social participation and employment status were positively correlated with QoL. Specifically, individuals employed full-time reported higher QoL scores compared to those working part-time, with part-time workers in turn reporting higher QoL than individuals not employed.

In regards of social participation, clearly the greater quantity of social activities one is involved in the greater influence these have on subsequent QoL. This finding supports the applicability of Social Activity Theory, emphasising the importance of social engagement in enhancing overall well-being.

However, the analysis revealed that neither work involvement nor social participation moderated the relationship between LA and QoL. This suggests that while engaging in work, or an extensive array of community activities positively impacts overall QoL, it does not provide a protection or counterbalance the negative consequences of living alone on QoL. This suggests that these forms of activity do not regulate the risk for people who live alone.

Similarly, this result suggests that work status or social participation does not diminish or spillover into QoL for individuals in other living arrangements. Therefore, work and social participation neither undermine nor conflicts with the QoL of older adults living with a partner or family. These findings indicate that work and external social activity coexist without significant disruption to QoL which concurs with findings from other similar studies (Antonucci et al. 2001; Börsch-Supan et al., 2008; Van Solinge & Henkens 2007).

In contrast to findings on social connectedness, this study observed that while work status significantly influenced QoL, no direct relationship was found between being in paid employment and levels of social connectedness. This suggests that the positive impact of paid work on QoL in later life may arise from mechanisms beyond the formation of quality social relationships. While older adults in the workforce may experience the social benefits of work these networks are clearly more functional rather than emotionally fulfilling, and do not contribute to the deeper emotional connections that might be present in family or close personal relationships. This reinforces findings in studies by Moen and Chermack (2005) and Wang and Shultz (2010).

Two prominent factors identified in this analysis include the association between paid work and higher income levels, and the lower likelihood of disability or ill-health among those still in the workforce. In addition to these material and health-related associations, remaining in paid employment may also confer important psychological advantages not covered in this analysis. As traversed in Chapter 3 these include a sustained sense of purpose, self-worth, autonomy, and continued personal efficacy (Wang et al., 2016; Zhan et al., 2015). Moreover, work may serve as a domain where older adults can continue to experience competence, social recognition, and agency, supporting broader psychological needs as articulated by Ryan and Deci (2000). Although a subject for further research, this study suggests that workplace relationships, while meaningful, will likely lack long-term sustainability beyond employment, given the lack of relationship between work and social connectedness. Work may in effect place a limit on social connectedness outside of those derived through familial relationships. Equally implied by these finding is that the distinctive contribution of work to enhanced QoL will likely be relinquished on retirement, unless compensated for though other mechanisms.

The Buffering Role of Social Connectedness

Analysis from this study identified a relatively weak positive association between social participation and social connectedness. This suggests that simply increasing the number of social interactions has only a limited effect on the perceived quality or depth of those relationships. For older adults, a small but emotionally meaningful network tends to be more impactful than a large, superficial set of engagements. As such social connectedness goes beyond simply having a network of people around; it encapsulates the depth and emotional significance of these relationships. This

finding reflects findings by Cornwell and Waite (2012), Holt-Lunstad, et al. (2010) and Krause (2006), in relation to health outcomes, longevity and wellbeing.

This study found social connectedness to be strongly related to QoL reinforcing its influence on older adult's wellbeing. The fit of a model containing social connectedness and related moderating variables was much better than that of a model containing only the variables related to social participation. And the results from this study found it to have a greater effect size than that identified in studies by Holt-Lunstad et al. (2010), Kelly et al. (2017) or Santini and Koyanagi (2021). As hypothesised, social connectedness emerged as a critical moderator, particularly for individuals living alone, highlighting its pivotal role in buffering the negative effects of solitary living. This finding underscores that it is not simply the quantity of social interactions, described in the previous section, but rather the quality and depth of social relationships that have the most significant impact on mitigating the adverse effects of living alone. By inference, this finding also suggest that it is the depth of such relationships with a partner or with one's family that ultimately influence the relatively higher QoL experienced for those older adults living in these circumstances.

Based on the findings presented here and the literature explored in Chapter 3, it is suggested that these factors likely operate through several key mechanisms: First, emotional support, feeling understood, valued, and cared for, serves as a protective factor against loneliness and social isolation. Close, meaningful relationships foster a sense of security and belonging, contributing to better mental health and well-being (Wills, 1985). Additionally, emotional support provides encouragement critical to maintaining a sense of control over one's life. Depth of emotional relationships are also closely tied to self-realisation, as individuals feel empowered to pursue personal goals and aspirations, leading to greater life satisfaction. Such self-realisation may often be embedded in the social roles they engage in, and the opportunities for reciprocity, such as caring for grandchildren.

Second, instrumental support, such as practical help with daily tasks, alleviates the physical strain and stressors often associated with ageing. This support reduces the stress of managing alone, leading to improved physical and emotional health outcomes (Berkman et al., 2000).

Third, social connectedness plays a crucial role in promoting cognitive engagement by providing opportunities for mentally stimulating interactions that are essential for maintaining cognitive function and preventing cognitive decline. Results from the literature review consistently demonstrated that meaningful social interactions, particularly those involving deep and supportive relationships, enhance cognitive resilience in older adults (Luo et al., 2012). These deep, reciprocal relationships create a dynamic environment that promotes mental agility, sharpens memory, and slows the progression of cognitive decline, reinforcing the protective role that social connectedness plays in cognitive health (Berkman et al., 2000).

Fourth, social connectedness is also about shared experiences and validation, which encourage personal growth and enhance self-esteem. Engaging in activities with others promotes enjoyment and satisfaction, improving one's sense of pleasure. The lower rating for social participation compared to social connectedness suggests that sustained pleasure is not derived from the quantity of experiences or merely engaging in activities with others, but from relationships that foster a sense of shared engagement, which significantly impact life satisfaction. Deeper relationships motivate involvement in activities, provide a sense of reality, and facilitate reciprocity, all of which contribute to a sense of self-worth.

Autonomy as a Psychological Determinant in Quality of Life

The findings from this study emphasise that while autonomy is often regarded as a crucial factor in QoL, it cannot fully replace the emotional benefits derived from close relationships, especially in older adulthood. This study reinforces theoretical and empirical findings that suggest that as individuals age, their needs and priorities shift, with a greater emphasis on emotional fulfilment, security, and a sense of belonging, rather than the solitary pursuit of independence. This study suggests that older adults may be willing to sacrifice some level of personal autonomy in exchange for the comfort, support, and purpose that come from deep, emotionally fulfilling relationships with significant others, such as living with their family. This aligns with Carstensen's (1992) Socioemotional Selectivity Theory (SST), which posits that as people age, they prioritise emotionally meaningful relationships over more superficial or less emotionally satisfying connections. Moreover, the study's findings resonate with Deci and Ryan's (1985) Self-Determination Theory (SDT), which asserts that well-being is not solely dependent on the unrestricted fulfilment of all psychological needs. According to SDT, as long as one or more core psychological needs, such as relatedness, competence, or autonomy, are sufficiently met, individuals can maintain wellbeing even if other needs are compromised. The fulfilment of "relatedness" may compensate for a decrease in autonomy, thus ensuring continued wellbeing despite a loss of independence. The study therefore builds on well-established psychological theories while challenging simplistic notions of independence as the sole marker of ageing success.

Limitations of the Study

This section outlines the limitations of the current study, which arise from technical, methodological and conceptual factors inherent in conducting quantitative analysis of the New Zealand Health, Work and Retirement Study (NZHWRS). While the longitudinal approach undertaken in this study provides important insights into temporal changes and the potential to identify causal relationships rather than merely associative ones, these designs are subject to several methodological challenges that can affect the internal validity, reliability, and external generalisability of the findings. Acknowledging these limitations is crucial for interpreting the

findings presented in this thesis and for guiding future research.

Technical Limitations

Key limitations of longitudinal studies include participant attrition, potential biases from cohort effects, and challenges in accurately measuring change over time. Additionally, the extended duration of data collection may lead to participant fatigue and inconsistencies in data quality. The following summarises seven limitations inherent to the nature of this study:

1. ***Selection bias***: It was not possible in this study to assess the extent to which there may be selection bias introduced by those who have chosen to be involved in this study. This may derive from those who are better educated, less transient in their living circumstances and for whom English is not a challenge. While deliberate attempts have been made to ensure an overrepresentation in the sample for Māori, other non-European groups and potentially the experiences of new migrants are underrepresented.
2. ***Study Duration, Participant Fatigue and Attrition***: Longitudinal studies are often affected by participant fatigue or declining interest over time, which can result in disengagement or incomplete participation. As participants become less engaged, the accuracy and relevance of the data they provide may decrease. This may account for the gaps in data and a reduction in the overall quality of responses identified the sample used in this study. Similarly, the quality of the data may also reflect maturation effects and inherent cognitive decline, which is inherent to the target age group of this study.
3. While **attrition rates** for each wave employed in this study were not specifically analysed, the loss of respondents between waves may introduce systematic bias with those groups that drop out differing significantly from those who remain. This attrition may compromise the representativeness of the remaining sample, potentially skewing the results, reducing the generalisability of the findings and compromising the study's internal validity. As an example, a key component of this study involved examining transitions between living arrangements from T1 to T2. However, given the mail-based survey method, changes in living arrangements may result in a loss of contact information and limit the number of responses from participants experiencing such transitions. In the same way, attrition may be attributed to worsening health and the onset of disability among participants. Potential changes in future waves to overcome attrition might include the collection and use of email addresses for respondents.
4. **Sample size limitations and data quality**: Although the study population for the NZHWRS is relatively large, with 3275 respondent, compared to many psychological studies, attrition between T1 and T2 waves, combined with extensive data cleaning to address missing or incomplete data and improve data quality (e.g., correcting for uniform response bias), resulted

in a vastly smaller sample size (n.=2081) and reduced statistical power for analysis across some key categories. Of particular note, the living with family and living with other groups had particularly small sample sizes. This situation may have introduced some element of Type II error (false negative) into the analysis associated with these constructs. Therefore, any non-significant finding could be due to the study's inability to detect significant effects, rather than those effects not existing in the population. This may for example have been a factor in the shifts identified in living arrangements between T1 and T2 being found to be not significant.

5. **Ethnic composition** was also problematic with particularly small cell sizes beyond the New Zealand European and Māori respondent groups. The consequence of this limitation is that the study was unable to examine the distinct contexts of Asian or Pacific older adults. The analysis also found little differences between Māori and non-Māori experiences in respect of LA on QoL. The consequence of this finding was that a decision was taken to not provide post-weights to address the overrepresentation of Māori in the sample population.
6. **Cohort Effects**: Cohort effects refer to the influence of the group to which participants belong (e.g., historic, cultural, social, economic factors) on the study outcomes. The focus population for this study includes individuals born during the Great Depression of the 1930s (i.e. those in their late 80-s), during the Second World War (those aged in their mid-70's or older), and into the early 1960s (those age between 55 and 58 years). As such, the findings may be specific to these cohorts and may not be fully applicable to future cohorts. For instance, individuals entering these age groups in the future may have had different life experiences, better health, and distinct generational influences. As noted in the analysis above, varying gender experiences and values may change significantly compared into the future. This population is likely to have, in the most part experienced universal home ownership as a consequence of public policy settings of the 1950s through to the 1970's. Additionally, this cohort is relatively smaller in size, which could result in differing public health and welfare responses compared to the future, when a larger older population may place greater strain on service systems, or alternatively such services may become better attuned to the needs of this population. Moreover, this cohort is underrepresented by the diversity of Pacific and Asian communities, who began migrating to New Zealand in larger numbers from the 1970s onward.
7. **Temporal Effects**: To establish the model for this study, data from the 2018 (T1) and 2020 (T2) waves from the NZHWRS were utilised to assess impact of specific circumstances and characteristics at T1 on the dependent variable QoL at T2. The aim was to go beyond mere correlations and infer causal relationships. The selection of the 2020 wave was deliberate, intended to minimise the potential confounding effects of COVID-19 disruptions on subsequent data collection and outcomes. However, the relatively short interval between T1 and T2 may

have been insufficient for capturing the long-term impact of LA on QoL, which could undermine the ability to establish a clear causal link. Additionally, this limited timeframe may not have adequately reflected the influence of transitions in LA on QoL as proposed in Hypothesis 2, with too few respondents in the sample experiencing a change in LA over this period, raising the possibility that the findings could be indicative of a Type II error.

Measurement Limitations

Living Arrangements: Aggregating diverse living arrangements into broad categories (e.g., "living with family") may obscure important nuances, including the specific roles older family members play within the household. However, due to sample size constraints, priority has been given to ensuring sufficient sample representation across all categories. As a result, this approach limits the study's ability to delve deeper into living arrangements beyond the three specified categories. Additionally, alternative household configurations, such as living with a partner in a multi—generational household, could have been explored. However, this was not pursued to avoid overcomplicating the analysis, as introducing multiple family types would have likely led to smaller sample sizes within specific categories, reducing the statistical power and interpretability of the results.

CASP-12: Central to this study is the use of the CASP-12 scale to assess QoL, with a particular emphasis on psychological well-being and functioning. As outlined earlier, the scale demonstrates strong psychometric properties, predictive validity, and relevance for evaluating QoL in older adults. However, one notable criticism of CASP-12 concerns its limited sensitivity to change over time, which may constrain its effectiveness in longitudinal analyses (Wiggins et al., 2008). Again, it may be this factor that influenced a non-significant finding in regards of Hypothesis 2 exploring changes in LA on QoL. Further analysis is recommended to assess the scale's sensitivity to change in the context of the NZHWRS. This could involve evaluating score variations among participants who experience specific life events to determine if the scale captures corresponding shifts in perceived QoL. Additionally, the scale should undergo further statistical testing, such as correlation or factor analysis, to examine how changes in CASP-12 scores align with changes in other established QoL measures.

Measuring Social Connectedness: Researchers have pointed to substantial ambiguity in the measurement of social connectedness which they suggest is conceptually ambiguous and multidimensional (Plackett et al., 2024). While researchers agree that it refers to the extent to which individuals feel connected to others and their communities, there is no single, universally accepted definition, with substantial variability in how social connectedness is conceptualised, ranging from measures that focus on social relationships to those that address emotional support,

belonging, and community involvement. Much of the existing research literature has been dominated by the study of loneliness rather than the positive aspects of social connectedness. And indeed, in this study social connectedness has been measured using the Loneliness Scale (DJGLS) developed by de Jong-Gierveld & van Tilburg (2006), where there is an emphasis on the absence of companionship or social contact as opposed to directly assessing the presence of positive social relationships. This emphasis may bias our understanding of social connectedness. In terms of its statistical power the DJGLS was found to be a particularly strong predictor of QoL in older adults, and highly correlated with other social connectedness measures such as the Social Provisioning Scale. Additionally, it has demonstrated its utility in identifying underlying protective capacity when compared to other indicators of social activity. Given the significance of the findings in this study, further research is warranted to explore and refine measurement tools that can more comprehensively capture and enhance our understanding of social connectedness.

Income: Given that income is merely employed as a moderating variable it is accepted that there are substantial deficiencies or inaccuracies with this measure and its treatment. These include respondent accuracy and recall, or access to income information where respondents may reside with or are dependent on others. This analysis equally does not account for the complexities of living arrangements, such as household size or household composition which would normally involve income equivalisation (Fritzell et al., 2012; Zaidi, 2010). Additionally, it overlooks income distributions within the household and, crucially for this thesis, excludes non-monetary contributions to household resources. These include unpaid caregiving, in-kind transfers like contributions to bills, or the receipt of regular food parcels from relatives, all of which can significantly impact household well-being.

Methodological Limitations and Opportunities for Further Research

In adopting the NZHWRS as the data source for this study, there are both strengths and limitations that arise from the scope and design of the dataset. The primary limitation is that the study is confined to the variables and measures collected by the NZHWRS, sampling design and existing data collection practices. This in turn constrained dimensions of the research questions explored. However, there are important merits in the adoption of the NZHWRS, particularly in terms of its alignment with broader, international research efforts and established methodologies in the field of ageing research; a key advantage is the large-scale nature of the dataset. Its consistency in sample and measures over time was crucial for understanding the dynamic nature of ageing. The longitudinal nature of the available sample was especially important for developing models that aimed to identify underlying causality.

While the quantitative analysis in this study offers important insights into the relationship between living arrangements (LA) and quality of life (QoL), it has inherent limitations. These could

be addressed through complementary qualitative methods, such as interviews or focus groups, which allow for a richer understanding of the nuances and complexities of individuals lived experiences. Qualitative analysis can explore the intricacies of these factors in more detail, offering a more holistic view of QoL that encompasses not just measurable outcomes but also individual perceptions, attitudes, and emotions. Such an approach could provide the necessary context to understand the underlying causes behind observed trends, giving more meaning to the statistical results. For instance, understanding how the experience of moving in with one's children affects one's sense of autonomy or control.

A further limitation of this study lies in the reliance on standardised instruments such as CASP-12 and other fixed-response scales, which may not fully capture the complexity and diversity of older adults' experiences across different living arrangements. These tools, while useful for large-scale comparisons, risk oversimplifying nuanced aspects of individual well-being. As an example, a key limitation in assessing the impact of social connectedness on outcomes is the inability to identify the specific sources of social support. For instance, it remains unclear whether the benefits attributed to social connectedness among those living alone stem from external relationships, such as friends, neighbours, or community involvement or they are familial in nature. Conversely the current analysis assumes that for those living with family, social connectedness is largely derived from those familial relationships; however, without more detailed data, this assumption cannot be verified.

Areas for Future Research

The findings from this study raise several important questions that warrant further research, particularly in the context of aging, living arrangements, social isolation, and social connectedness among older adults. The following areas represent key avenues for future exploration:

1. **Qualitative Studies:** Due to its design, this study is somewhat limited in its ability to fully investigate the psychological and other underlying mechanisms that contribute to the dynamic relationship between LA and QoL, as well as the factors influencing these dynamics. To gain a more comprehensive understanding of these processes, future research could complement these findings by employing focus groups or more in-depth qualitative methodologies. Such approaches would offer valuable insights into how these mechanisms function, revealing the underlying causal relationships that shape the experiences of older adults in different living arrangements, as well as the role of social connectedness, which has been shown to have such a significantly impact.
2. **Non-community Living Arrangements**: This study's sample population was limited to older adults living in the community, which, while providing valuable insights, does not capture the full

spectrum of the ageing experience, particularly for those residing in assisted living or aged care facilities. Future research should examine the experiences of individuals in these settings to offer a more comprehensive understanding of QoL across various living arrangements and policy settings. Such studies could explore whether the social engagement opportunities in these environments lead to improved or diminished outcomes for older adults. Additionally, this study did not consider the impact of private retirement villages offering independent living units on the QoL for older adults. These settings, which may encourage greater social interaction compared to individuals living alone in the community, could also potentially limit connections with family and friends. Future research could assess the balance between enhanced social engagement and potential isolation in such environments, providing valuable insights into how these living arrangements affect older adults' overall QoL. In such undertakings it will be important to control for issues such as disability and ill-health. It is equally important to examine the extent to which multiple social interactions with staff and fellow residents in aged care settings function as both sources of support and potential stressors for elderly individuals. The loss of privacy and autonomy, along with the intensity, frequency, and nature of these interactions, may lead to increased psychological strain and emotional exhaustion, rather than emotional relief.

3. **Intergenerational Living Arrangements**: One of the key findings in this study is the increasing prevalence and significance of intergenerational living arrangements among older adults. While this emerging trend is briefly touched upon, further research is needed to examine the long-term impacts of intergenerational living, especially across different family structures and cultural contexts. Given the increasing complexity of family dynamics and increasingly diverse cultural nature of Aotearoa, further exploration of how intergenerational living influences social connectedness, caregiving, and overall QoL for both older adults and their family members is essential in the context of an ageing society.

   This study also found that younger-old adults living with family members (aged 55-64) reported lower overall quality of life. This decline was attributed to a loss of autonomy and control, either due to their dependence on family members or the responsibility of providing support to family members. These findings highlight the need for a deeper understanding of the underlying factors driving these dynamics, as well as the long-term implications of such living arrangements as these individuals continue to age.

4. **The Oldest Old (85+ Population)**: With the growing proportion of individuals aged 85 and older, identified in Chapter 1, further studies are needed to explore the unique dimensions of QoL and wellbeing for this demographic. This group faces particular challenges due to physical decline, and increased vulnerability to social isolation. Future research should investigate how this

subgroup experiences social connectedness, especially in relation to gender, living arrangements, and functional capacity. It is particularly important to consider the experience of those living alone, as this study has shown that their risk of harm, of social isolation and loneliness is heightened.

5. **Gender Differences in Social Connectedness**: The study highlights significant gender differences in experiences of social connectedness and QoL, with particular vulnerabilities evident among men who are unpartnered or have experienced the loss of a partner. Existing research suggests that older men tend to have smaller social networks and are more dependent on their partners for emotional and instrumental support (Antonucci et al., 2007; Victor & Bowling, 2012). Future research should focus on understanding how older men maintain or reconstruct social connectedness following the loss of a partner, examining the evolution of their social networks and coping strategies over time. Moreover, further exploration is needed into how cultural norms around masculinity may discourage help-seeking behaviours, which could exacerbate poorer outcomes (Mahalik et al., 2003).
6. **New Migrants and Ethnic Minority Groups**: Although not directly explored in this study, the growing concern in the literature regarding the challenges faced by older new migrants and members of ethnic minority groups suggests a critical area for future investigation (Guruge, 2022). Research should explore the extent to which family relationships and support infrastructure are sufficient to mitigate the structural barriers, such as language difficulties, cultural dislocation, and limited social networks, that older new migrants face in Aotearoa New Zealand. Understanding these barriers are essential for designing responses to an increasingly changing concentration of these population groups within our communities.
7. **Disabilities and Chronic Health Conditions**: Older adults with disabilities or chronic health conditions were shown to be particularly vulnerable to social isolation and poor QoL outcomes in this study. Further investigation is needed to determine whether current aging-in-place models, such as Home and Community Support Services (HCSS), adequately address the complex social and emotional needs of older adults with disabilities or poor health (Samsi et al., 2023). Future research should focus on evaluating the effectiveness of integrating emotional support with practical assistance to enhance the QoL of older adults with disabilities.
8. **Bereavement and Its Emotional Impact**: Chapter 3 reveals that losing a partner greatly affects older adults' quality of life, especially for those living alone or men, resulting in long-term vulnerability. Future research is needed to explore how bereavement affects social connectedness and emotional well-being over time, especially in older populations. It is crucial to investigate the extent to which the community recognises the grief experienced by older adults following widowhood, and what additional support may be necessary to help older

individuals cope with and adjust to such a profound loss.

9. **Tool Development:** While the de Jong Gierveld Loneliness Scale (DJGLS) has proven effective in capturing aspects of social connectedness, further research is needed to refine and disentangle the specific components of social connectedness that contribute most significantly to improvements in QoL. Additionally, comparative analysis of the DJGLS against other established measures of social connectedness is warranted to evaluate their respective strengths, validity, and applicability to understanding notions of Social Connectedness in ageing research.

Chapter 8: Conclusion: Implications for Policy and Practice

Ensuring an optimal quality of life (QoL) for older adults is crucial across research, policy, and practice. It not only measures the success of healthy ageing initiatives but also reflects societal progress in supporting an ageing population. Analysis in Chapter 1 predicts that by 2053, a quarter of New Zealanders will be aged 65 and older, up from 11% today, with the population aged 85 and above increasing by 232%. Addressing QoL for this group is a moral and ethical imperative. At its core is promoting equity and dignity for this population group, through preventing marginalisation due to age, illness, or disability. The rapid growth of this demographic presents significant challenges for welfare and health systems, community services, individual families, but most particularly for older adults themselves. As Chapter 3 highlights, poor QoL correlates with increased morbidity and reduced life expectancy, further straining healthcare and social support services. Prioritising older adults' well-being is therefore essential.

The key conclusion drawn from the findings of this study is that maintaining a high QoL for older adults in New Zealand is strongly influenced by their living arrangements, as well as the support they receive from family, partners, and close friends. Older adults who live with family generally report a higher QoL compared to those living alone. However, as highlighted in Chapter 1, individuals aged 65 and over who live alone now represent a quarter of the older adult population, making it the second most common household type after couple households. This group has grown by 25% in the past decade, and this trend is expected to continue. New Zealand and international research points to older adults living alone as experiencing significant levels of social isolation and loneliness compared with those who live with others (Jameson et al., 2018). This study supports these findings. It also suggests that the anticipated benefits of independent living, which have been widely promoted in policy discourse as discussed in Chapter 1, are not fully realised by those living alone in the community. The study indicates that while independence, autonomy, and personal agency are often highlighted as key components of QoL, these factors may come at a cost to many older adults' overall enjoyment of life. Specifically, the importance of autonomy and agency appears to diminish in comparison to the deeper emotional and relational connections that older adults may seek or gain from, suggesting that social connectedness and meaningful relationships may play a more significant role in enhancing QoL than independence alone.

Both national and international research reviewed in Chapter 3 consistently highlight the significant challenges faced by older adults living alone. This living arrangement was also found to be closely linked to unmet healthcare needs, and challenges in service access which in turn negatively impact overall QoL (Prazeres & Santiago, 2016). Furthermore, individuals living alone were found to be at a higher risk for physical decline and accidents (Kharicha et al., 2007). These findings collectively underscore the importance of addressing the specific vulnerabilities of older

adults living alone, particularly in relation to loneliness, access to healthcare, and social support, as these factors can have profound implications for well-being and QoL. Community and social service agencies must adopt a more proactive and vigilant approach to understanding these risks and addressing them effectively.

This study suggests that traditional responses, such as community programmes promoting social participation (e.g., volunteering, social clubs, and senior-specific networks) fall short in addressing the deeper, more complex needs of older individuals. This study has shown that these interventions are insufficient to mitigate the negative consequences of living alone. Social participation may increase interaction but does not address the fundamental issues of loneliness and emotional isolation that many older adults experience through solitary living. In this study social connectedness emerged as a key moderator, particularly for those living alone, demonstrating its crucial role in buffering the negative impact of solitary living on QoL. This finding therefore reinforces that it is the depth of social relationships over quantity as measured through social participation that have the most significant effect in mitigating the consequences of living alone. Therefore, policy makers should move beyond promoting general participation in social activities and focus on fostering meaningful, deeper social connections. Initiatives that target the quality rather than just the quantity of social engagement will be crucial. For instance, policies could incentivise or facilitate family engagement, peer-support networks, or community-based mentoring initiatives that foster strong, emotionally supportive relationships. A clear opportunity here is how older people themselves might be supported to step into these roles.

Older adults with disabilities or chronic health conditions face significant challenges, especially those living alone. This study suggests that there is an urgent need to integrate healthcare, social support, and disability services to address their vulnerabilities. Assuming that those in this study reporting disability and ill health are receiving community-based support, the findings from this study suggest that current aging-in-place models, such as Home and Community Support Services (HCSS), outreach programmes, and transportation assistance, while maybe helpful for physical care needs, fall short in meeting the emotional and social needs of these individuals. To enhance these services, policy makers and practitioners should incorporate considerations involving emotional support alongside practical assistance within their outcomes-based funding along with training for those fulfilling these roles. This study suggests that assessing optimal living arrangements and earlier intervention should be crucial in welfare and health policies for older individuals with limited functionality who live alone.

Although not directly examined in this study, the findings suggest that living alone significantly impacts QoL for individuals who have lost a partner. Men, in particular, are more vulnerable due to smaller social networks and greater dependence on partners for emotional and

practical support. Without a partner, research suggests that men may struggle to form new social connections, increasing their risk of isolation (Antonucci et al., 2007; Victor & Bowling, 2012). Additionally, traditional gender norms may discourage men from seeking help further heightening their vulnerability (Wenger, 2001). This would suggest that policies and practices aimed at supporting older adults through the transition of partner loss should be an integral part of community care strategies. Support mechanisms, such as bereavement counselling, peer groups for widowed individuals, and social networks specifically designed to help individuals cope with loss, could provide crucial emotional support during these challenging periods. Furthermore, social interventions that encourage widowed individuals to remain connected with family and friends or help them re-establish social networks might promote their emotional well-being and enhance their QoL. From a practice perspective, men may be less likely to express their need for support or acknowledge difficulties in coping, which may exacerbate their risk of social isolation and poorer health outcomes.

Promoting Intergenerational Living and Family-Based Care

Although intergenerational households currently make up just 1 in 10 living arrangements for those over 65, they are the fastest-growing type of residential arrangement among older adults. Given the significant QoL benefits of living with family for older adults aged 65 and above identified in this study, acknowledging and supporting this form of arrangement will require a substantial policy shift from traditional approaches to supporting ageing in place. Assuming that caring for older relatives is solely the responsibility of families who choose to support an older member can undermine both the well-being of the family caregivers and the older individuals themselves. This assumption may limit the access of older people to essential services, as it assumes that families will shoulder the burden of care without considering the broader support systems available in other contexts. As described in Chapter 3, New Zealand's interRAI assessment tool explicitly discounts family LA and the availability of family support in determining the level of additional care provided to those with disability of chronic health conditions. Such expectations not only place undue strain on families, but they also have the potential to marginalise certain communities, particularly Pacific and Asian households, which disproportionately provide intergenerational care to older family members. When these cultural caregiving norms are overlooked or taken for granted, they can perpetuate systemic inequalities, effectively operating as a form of structural racism that disproportionately affects these groups. Consequently, these arrangements require different responses nuanced to individual family needs, and culture contexts. Policy initiatives could include incentivising or recognising family-based care through tax benefits or housing subsidies for families opting to live together. Providing resources and advice to assist families in navigating caregiving roles are also critical, as is ensuring that older adults retain their autonomy

and gain from familial support.

The study highlights that women, particularly those aged 65 and older, gain greater emotional and relational benefits from living with family compared to men. This suggests that gender dynamics should be considered in the development of policies and support services for older adults. Practitioners should also be mindful of the distinct challenges faced by men, who may experience a perceived loss of independence and autonomy in family-based living arrangements but are equally more vulnerable when they are living on their own. Gender-specific interventions that address these disparities in emotional well-being could improve outcomes for older men and women alike.

Conclusion

The findings of this study underscore the complexity of factors influencing the QoL of older adults, with living arrangements, social connectedness, and disability playing central roles. For policy makers, the implications are clear, strategies should aim to enhance the living arrangements of older adults by supporting intergenerational living, addressing the challenges of social isolation, and supporting both familial and community-based care. For practitioners, the focus should be on providing tailored interventions that foster strong social relationships, while also ensuring access to the necessary resources and support systems. By adopting a holistic approach that integrates these factors, researchers, policy makers and practitioners can work together to improve what will be the growing challenges to the QoL for older adults in New Zealand.

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Appendix 1: The New Zealand Health, Work and Retirement Survey, General Instructions

The data analysed in this study were drawn from the 2018 and 2020 waves of the New Zealand Health, Work and Retirement Study, a longitudinal survey administered by the Health and Ageing Research Team (HART) at Massey University. The data and instruments used in this study are provided by the HART (Health and Ageing Research Team) at Massey University. All use of survey data and questionnaire instruments complies with the terms and conditions set by the HART research group and Massey University's Human Ethics Committee. The instructions for completion of the Survey, described below are included for illustrative purposes only. Details of the questionnaire can be accessed with permission from the HART research group at Massey University.

General instructions for completing the survey

Please read the following carefully

- You can decline to answer any particular question. If you choose not to answer a question, please leave it blank.
- There are no right or wrong answers; we want the response that is best for you.
- It is important that you give your own answers to the questions.
- Do not linger too long over each question; usually your first response is best.
- Completion and return of this survey implies consent to take part in this component of the study.

For each question in the survey you will be asked to provide either:

- a single response. Please mark with a cross (e.g. ×) inside one box on each line in pen. If you make a mistake, simply scribble it out and mark the correct answer.
- one or more responses, as appropriate. For these items you will be instructed to *'Please cross all that apply'*.
- a written answer. To provide words, please print your answer as clearly as possible on the line provided.

Example question and response: Please cross 'Yes' to inc icate if a health profes ional has told ɔ u that you have any of the following conditions:

(Please cross one box on each line)	No	Yes, in the last 12 months	Yes, prior to the last 12 months
Sleep disorder	× 1	2	3
Stroke	× 1	2	3
Cancer	1	× 2	3
Please specify cancer type:	melanoma		

- a number: where a number or date is required, print the figure in the box provided.

Example question and response: How many of the following people are you in regular contact with? Please place a zero or a number in the squares as appropriate:

Adult child(ren) and/or grandchild(ren)/mokopuna		5

Thank you for taking the time to complete this questionnaire.

If you need help to answer any questions, please contact us either on the HART free-phone line 0800 100 134 or via email: hart@massey.ac.nz