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An Investigation of Late-Life Friendship Networks, Friendship Network Change and Subjective Wellbeing.

Volume 1 of 3

By

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Abstract

Increasingly large proportions of the British population are living in later life (Office for National Statistics (ONS), 2021a) and demographic and social/cultural trends are changing what it means to grow older in contemporary Britain (Carr and Utz, 2020). Whilst increasing numbers of older adults navigate these new forms of later life, the COVID-19 pandemic has also generated a renewed interest in the impact of social isolation on wellbeing. Despite social isolation being experienced by individuals of all ages (Barreto et al., 2021) the later part of the life course, for many, brings with it unique challenges for the creation and maintenance of positive social relationships. This thesis adds to these debates by providing an examination of one type of social connection in contemporary Britain, friendship. The thesis explores, the impact of friendship on the wellbeing of older adults, the nature of friendship changes in later life, and the impact of the COVID-19 Pandemic on late life friendships.

The thesis is divided into three separate research studies. The first study uses cross-sectional binary logistic regression analysis of data in the UKHLS, to examine the relationship between older adult's friendship networks and their wellbeing (life satisfaction) based on their household composition, their family networks and community group participation. The second study explores the impact of a transition into friendlessness on wellbeing (life satisfaction) using longitudinal data in the same survey. The third study builds on the findings in the prior studies using data from twenty, remote 1:1, interviews collected at the outset of the COVID-19 Pandemic. This data is used to explore how older adults understand and manage their changing friendship networks during the first 'lock-down' of the COVID-19 Pandemic.

The presence of a friendship network is found to increase the odds of high wellbeing among older adults (+60) to a greater degree than the impact of family or community group participation. For individuals who do not live with a partner or live alone, friendships hold even greater importance and fulfil specific protective functions for wellbeing. Larger friendship networks are found to increase one's odds of high wellbeing more so than smaller friendship networks (Walen and Lachman, 2000) and

the thesis results suggest that beyond this, it is the act of gaining one's first friend has the greatest wellbeing impact. Friendships that have been held for a long time and hold high levels of reciprocity offer additional wellbeing benefits. Different types of friends are found to have different wellbeing benefits and to be resilient to different social network shocks suggesting the importance of the development of diverse friendship networks. Friendships are also found to offer benefits for the maintenance of social relationships, they can replace the loss of familial relationships and foster conflict resolution among romantic and familial ties. In conclusion, late life friendships can deliver a unique and important wellbeing benefit for older adults. As wider demographic, technological and cultural forces change late life social networks, it is important that academics and policy makers continue to focus on the role of friendship within these. The critical role that friendship play in the production of high wellbeing for older adults justifies the prioritisation of interventions to reduce the loss of friendships within wider social isolation or loneliness policies and interventions.

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Academic Thesis: Declaration of Authorship

I, Eleanor (Ella) Moonan-Howard declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

'An Investigation of Late-life Friendship Networks, Friendship Network Change and Subjective Wellbeing'.

I confirm that:

This work was done wholly or mainly while in candidature for a research degree at this University; where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated; where I have consulted the published work of others, this is always clearly attributed; where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work; I have acknowledged all main sources of help; where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

Parts of this work have been published as conference papers at the following conferences:

> South Coast Doctoral Training Partnership, Final Year Conference (2022), 'A Qualitative Exploration of the Friendship Network Maintenance and Management Processes of Older Adults During the COVID-19 National Lockdown', Conference Presentation.
>
> British Society of Gerontology, Annual Conference (2021), 'A Qualitative Exploration of the Friendship Network Maintenance and Management Processes of Older Adults During the COVID-19 National Lockdown', Conference Presentation.
>
> British Society of Population Studies, Annual Conference (2019), 'Are Older Individuals Living Alone, Actually Alone? Friendship Networks, Subjective Wellbeing and Household Composition', Conference Presentation.

Signed:

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Abbreviations

U-Soc	Understanding Society, The UK Household Longitudinal Panel Survey
COVID-19	SARS-CoV-2 virus, otherwise known as Corona Virus
60+	60 years of age or older
WEMWBS	Warwick-Edinburgh Mental Wellbeing Scale
GHQ-12	Twelve-Item General Health Questionnaire
ONS	Office for National Statistics
SWB	Subjective Wellbeing
SHARE	Survey of Health, Ageing and Retirement in Europe
SCT	Social Convoy Model
SST	Socio-emotional Selectivity Theory
CT	Continuity Theory

1. <u>Introduction</u>

1.1.   Research Overview

From our birth until our death, our thoughts, feelings and even our very sense of self is continually shaped by our interactions with the people who surround us. Our quest for positive social interactions forms the structure of our social systems and negative social interactions generate immeasurable suffering. The 'social convoy' of strong, intimate ties that individuals develop across their life course (Kahn and Antonucci, 1980) (Antonucci et al., 2013) has a major impact on their health (Yang et al., 2016) (Umberson and Montez, 2010), their life expectancy (Berkman and Syme, 1979) (Holt-Lunstad et al., 2015) and their subjective wellbeing (Shankar et al., 2015) in later life. No two individuals nor two life trajectories are identical, and therefore neither are two social networks. The extent to which these networks have a positive and/or negative influence on an individual's health and wellbeing, can be attributed to the 'structures', 'processes' and 'phases' of that individual's social network (Adams and Blieszner, 1994), see section 1.4.1. This may include factors, such as whom an individual is connected to, they behaviours used to maintain social relationships, and the contexts in which relationships are developed. Disentangling these social forms has long been the subject of academic enquiry. This thesis contributes to this scholarly tradition through the exploration of one relationship form: the late-life friendship.

This thesis sheds light on several questions around contemporary British late life friendship and is comprised of three research studies each with different research questions and distinctive methodological approaches. The first study explores friendship and wellbeing in the context of one's household composition, and in relation to one's non-friendship based social ties (research questions 1 and 2, results presented in chapter 4). The second study explores longitudinal friendship network change and its impact on wellbeing (research questions 3 and 4, results presented in chapter 5). The third study explores friendships change and the impact

of friendship on wellbeing during the COVID-19 pandemic (research questions 5 and 6, results presented in chapter 6). The research questions are outlined below.

Research Questions:

1) How is the presence and size of an older adult's friendship network associated with their life satisfaction?

> 1a) How does the relationship between the presence and size of one's friendship network and their life satisfaction differ from the relationship between their familial/community group activity and their life satisfaction?

> 1b) How does the relationship between the presence and size of one's friendship network and their life satisfaction vary based on their household composition?

2) How do the friendship networks of individuals in different household compositions vary in nature (the proximity of the friends, the similarity of the friends to the ego in terms of age, ethnic group, education, and income, multiplexity of the friendship network and frequency of interacting online)?

3) What proportion of older adults in this sample report transitioning from having friends to not having friends across a six-year observation period?

> 3a) How does observed friendship network change compare to family and or community social network change?

4) Is the loss of an older person's (60+) non-residential friendship network associated with a change in life satisfaction across a six-year time period?

5) How did the participants describe their friendship networks?

> 5a) How did the participants describe these friendships in the context of their wider social networks?

> 5b) How did the participants describe the impact that these friendships had on their wellbeing?

6) Did the participants describe experiencing any retrospective changes to their friendships because of the COVID-19 restrictions or otherwise

> 6a) If not, why not?

> 6b) If so, was this associated with a change in their wellbeing?

The thesis explores new aspects of late life friendship, such as how older adults manage these relationships during the COVID-19 Pandemic and how these relationships may have been influenced by contemporary living arrangements, family structures and new technologies. The thesis also utilises new methodologies and data sources to further understand the more enduring aspects of late life friendship. The use of longitudinal survey data allows for a discussion of friendship change across time. Moreover, the use of both qualitative and quantitative methods allows for a simultaneous discussion of broad friendship trends and specific friendship case studies, generating new perspectives on established social forms.

1.2.   Research Justification

Modern adult friendships are, by definition, marked by agency, intimacy, and affection (Roberto and Kimboko, 1989) (Pahl, 2000) and these friendships occupy a unique and crucial place within an individual's wider social network (Fiori et al., 2020; Huxhold et al., 2014). Research has found that the role of late-life friendships on one's subjective wellbeing is unique from other types of social relationship (Amati et al., 2018), and distinct from friendships at different points in the life course (Huxhold et al., 2014). We choose to nurture our friendships, free from the ties of social obligation, legal bond, or genetic association. The maintenance of a friendship is the product of both one's inherent motivations and their access to the skills and resources that enable these behaviours. For these reasons, robust analyses of the dynamics of specific types of social relationship, such as friendship, is needed to compliment the establish literature on whole social networks. Unanswered questions remain about exactly which skills and resources best equip individuals to maintain their friendships and how these vary from friendship to friendship. Moreover, limited research has explored which types of friendship and friend positively contribute to an individual's wellbeing. It does not necessarily follow that the friends one is motivated to keep or finds easiest to hold are those that are best for their long-term wellbeing. This thesis will shed light on some of

these questions. The justification for examining later life friendships specifically is provided below.

As of 2021, there were approximately one billion people in the world aged over 60 (United Nations, Department of Economic and Social Affairs, Population Division, 2019). There is predicted to be two billion by 2050, and three billion by 2100 (*ibid*). This extension of the life course has catapulted social gerontology up the research agenda and provides a solid rationale for the investigation of social processes in later life. Not only are there more older adults than ever before, but macro demographic, social and cultural shifts are changing the ways that people are experiencing this period of the life course. For example, fewer adults are reaching later life with their first spouse (Carr and Utz, 2020). Moreover, greater numbers are experiencing divorce, re-marriage, opting into non-marital romantic partnerships, and/or choosing to remain single (*ibid*). UK marriage rates for opposite-sex couples were the lowest on record in 2018 (Office for National Statistics (ONS), 2018), and the number of cohabiting couple families has increased by 22.9% in the last decade (Office for National Statistics (ONS), 2022a).

UK total fertility rate also reached a record low of 1.58 children per women in 2020 (Office for National Statistics (ONS), 2020). These trends are indicative of shifts in one's preferred social network, and these new dynamics often coincide with different household and family structures (Carr and Utz, 2020). One can easily hypothesise that new forms of romantic and familial relationship may influence the value that an individual attributes to their friendships, and therefore influence the friendship networks they form and sustain (Fiori et al., 2020). Lots of data exists on romantic and family structures (due to public records on marriage, and census reporting on household formations among other sources). One's friendships in later life are less readily recorded and there is, therefore, less research about how friendship networks may have also changed. It follows that the body of literature mapping the importance of family and romantic relationships on one's wellbeing is far larger than that on the role of friendship on wellbeing (Blieszner et al., 2019). This thesis seeks to make steps towards rectifying this. A better understanding of

late-life friendship will inform policy, practice, spearhead innovation and improve the lived experiences of older adults' living in the United Kingdom. The following subsections provide greater context and justification to each of the three distinct research studies included in this thesis.

1.2.1. Study One: Friendship and Wellbeing within Wider Social Networks

As highlighted above, this thesis particularly contributes to the literature on social networks through an investigation of the role of friendship on wellbeing. This contrasts to other research approaches that have explored loneliness, social isolation (Fried et al., 2020; Holt-Lunstad et al., 2015; Lubben, 1988; Shankar et al., 2015), or have adopted a typological approach to social network analysis (Wenger, 1991). By exploring one type of relationship, friendship, a more nuanced investigation of the behaviours and actions that lead to relationship dissolution or maintenance can be provided. Friendships are, however, inextricably connected to one's wider social sphere and therefore friendship is examined alongside family, household ties and community group participation. Study One provides a comparison between the impact of familial and community group participation on wellbeing with that of one's friendships. It also provides an examination of the role that one's household composition may play in mediating the impact of their friendship network on their wellbeing. This focus on household composition provides a crucial contribution to the literature due to the changing nature of household structures.

More people are choosing to live alone in later life than ever before (ONS, 2021a). Research has found that living alone is both a risk factor for loneliness (O'Suilleabhain et al., 2019) and can be considered to be a dimension of social isolation itself. In fact, considerable attention has been placed on the need to disentangle the complicated relationship between loneliness, living alone and social isolation (Smith and Victor, 2019). Yet little research has explored if or how one's household composition may, more broadly, be associated with the friends they keep, and/or the association of these friends on their wellbeing. Alongside solo

living, the experiences of those living with just a partner, living with a partner and other individuals, and living with just other individuals are explored in the first thesis study. This approach is unique in that it not only specifically explores the role of friendship on wellbeing, but that it also independently examines this association within four household composition categories and compares this with other types of social network relationship (family, community).

1.2.2. Study Two: Friendship Change

The first thesis study develops an understanding of the different friendship structures in later life and the cross-sectional impact that these have on subjective wellbeing. Rather than focussing on the friendship structures the second thesis study focuses on a lack of friendships, or a state of friendlessness. This study examines the circumstances around transitions into or out of friendlessness, a big research gap. This includes questions around how and when a state of friendlessness occurs, how and when an individual transitions out of friendlessness, and what impact this transition could have on that individual's wellbeing. These questions are explored using longitudinal data across a six-year period.

1.2.3. Study Three: Friendship and the Pandemic

Following on from this investigation of the transitions into friendlessness, it is logical to explore the factors and circumstances that precipitate friendship loss in later life, and the processes people enact to maintain their friendships. The coronavirus pandemic provides a unique experimental opportunity to investigate friendship change. Unlike most life events, the lock-down restrictions were experienced simultaneously and universally. This creates a unique opportunity to observe the relationship management processes of a group of different individuals responding to similar challenges at the same time. This is a critical contribution to the existing knowledge base, providing an understanding of how older adults

conceptualise and negotiate friendship network change and the impact of this change on their wellbeing.

As well as exploring the nature of late-life friendship change around life events, this final stage of research also provides insight into the subjective definition of what it means to have or to be a friend in contemporary later life. This provides a critical insight into the utility of the established social network measures collected in national surveys such as those utilised in the first and second thesis research studies.

1.2.4. Policy and Practice

In just the period in which this thesis has been created, interest and activity in the field of gerontology has grown considerably. The UK Government named healthy ageing as one of their 4 'grand challenges' in their Industrial Strategy (2017), with the mission to 'ensure that people can enjoy at least 5 extra healthy, independent years of life by 2035'. Riding on the back of this commitment, 98-million-pounds was invested in a 'Healthy Ageing Challenge Fund', and ageing research centres at The National Innovation Centre on Ageing and the Design Age Institute were established. This increase in research and innovation in the healthy ageing space is also not confined to the United Kingdom as the World Health Organisation declared 2021 – 2031 to be 'The Decade of Healthy Ageing'.

Supporting social connections is a central priority within these healthy ageing debates. The Healthy Ageing Challenge names social connectivity as one of their 7 top strategic priorities, and other innovation organisations have followed suit. For example, 'a healthy life', is one of three mission objectives at Nesta and within this tackling loneliness is one of its two primary focusses. The social isolation agenda has also received considerable traction outside of the healthy ageing field. 2018 saw the appointment of the first Loneliness Minister and creation of the first Loneliness Strategy (Department for Digital, Culture, Media and Sport (DCMS), 2018). This was followed by a public health campaign (Department for Digital,

Culture, Media and Sport (DCMS) et al., 2019) and the creation of The Loneliness Network (Department for Digital, Culture, Media and Sport (DCMS), 2021a). These initiatives have also been supported by significant funding injections, including the Loneliness Engagement Fund, the Building Connections Fund and the Loneliness COVID-19 Fund (Department for Digital, Culture, Media and Sport (DCMS), 2021b).

The COVID-19 pandemic has only sought to increase the interest and investment in the healthy ageing and social connection agendas. Individuals aged over 65 with COVID-19 have a mortality rate more than 62 times higher than those aged 54 years and younger (Yanez et al., 2020). This age-based variation in COVID-19 vulnerability elevated the public platform for gerontological research, and the creation of 'lock down' policies and regulations on social interaction meant that debates around the importance of social interaction became widespread.

With the creation of new products and services designed to reduce social isolation and loneliness in later life it is critical that our understanding of the dynamics of social connection in later life are deeply understood. This thesis will contribute to these debates in the following ways:

1) Exploring the differences and similarities between different types of social connection.
2) Exploring friendship network change across time.
3) Exploring friendship network change at times of change (such as during the COVID-19 Pandemic).
4) Synthesising both the macro quantitative trends and the micro individual experience.

The following section aims to provides a concise overview of the aims, research questions, and methods in each of the three studies.

1.3.   Thesis Outline

This thesis is comprised of three research studies, with the results from each presented in chapters 4, 5 and 6. This section articulates the key aims, the research questions, and the methods behind each of these three studies, in doing so providing a brief overview of the thesis.

Aim One: To explore the role of household composition in mediating the importance of friendship based social ties on older adult's (60+) subjective wellbeing (results presented in Chapter Four).

Research Questions: 1) How is the presence and size of an older adult's friendship network associated with their life satisfaction?

1a) How does the relationship between the presence and size of one's friendship network and their life satisfaction differ from the relationship between their familial/community group activity and their life satisfaction?

1b) How does the relationship between the presence and size of one's friendship network and their life satisfaction vary based on their household composition?

2) How do the friendship networks of individuals in different household compositions vary in nature (the proximity of the friends, the similarity of the friends to the ego in terms of age, ethnic group, education, and income, multiplexity of the friendship network and frequency of interacting online)?

Method: Binary logistic regression models using wave 9 of UKHLS: Understanding Society

Aim Two: To explore how older adult's (60+) friendship networks change over time, and the impact of this on individual subjective wellbeing (results presented in Chapter Five).

Research Questions: 1) What proportion of older adults in this sample report transitioning from having friends to not having friends across a six-year observation period?

1a) How does observed friendship network change compare to family and or community social network change?

2) Is the loss of an older person's (60+) non-residential friendship network associated with a change in life satisfaction across a six-year time period?

Method: Fixed effects and random effects logistic regression models using wave 9 and 3 of UKHLS: Understanding Society. Samples that exclude those who did not age in place are also examined.

Aim Three: To explore how older adults' (60+) understand and manage their friendship networks during the coronavirus pandemic (results presented in Chapter Six).

Research Questions: 1) How did the participants describe their friendship networks?

1a) How did the participants describe these friendships in the context of their wider social networks?

1b) How did the participants describe the impact that these friendships had on their wellbeing?

2) Did the participants describe experiencing any retrospective changes to their friendships because of the COVID-19 restrictions or otherwise

2a) If not, why not?

2b) If so, was this associated with a change in their wellbeing?

Method: 1:1 Semi-structured remote interviews with 20 older adults. All participants live alone or with a partner, are over the age of 60 and have 'aged-in-place' in one neighbourhood.

1.4.   Definitions

This section outlines the conceptual understanding behind each of the key terms/concepts used within this thesis, where relevant a justification for its inclusion is provided. Further discussion of the ways these concepts are measured can be found in Chapter Three. The key terms explored in this section are, 'social

network' (section 1.4.1); 'friendship' (section 1.4.2); 'loneliness' and 'social isolation' (section 1.4.3); 'wellbeing' (section 1.4.4); 'ageing' and 'later life' (section 1.4.5); 'household composition' (section 1.4.6); 'ageing in place' (1.4.7) and 'resilience' (1.4.8).

1.4.1. Social Network

There are many approaches to understanding and measuring social networks. Egocentric social networks, for example, include all the individuals that a single person or 'ego' directly interacts with. In this case, that is the people that surround an older adult (60+) (Fischer, 1982, p.2). This differs from sociocentric social network approaches that explore all ties within a given space or institution.

This thesis adopts an egocentric approach to understanding social networks, but narrows its focus to one type of social connection within the wider social network – the friendship network (Wrzus et al., 2013). The 'structures', 'processes' and 'phases' of the friendship networks of older adults are examined throughout this thesis (Blieszner and Adams, 1992). Friendship network **'structures'** are those that make up the form of the relationship(s) such as the hierarchy, quantity, and type of interaction (Blieszner and Adams, 1992 pg4). Friendship network **'processes'** capture the "thoughts, feelings and behaviours involved in acting as friends" (*ibid*) and the term **'phases'** refers to the "formation, maintenance and dissolution of friendship networks and of the friendships within them"(*ibid*).

The thesis includes the investigation of both 1:1 dyadic friendship, as well as more complex multi-member friendship groups. Moreover, although this thesis focusses on friendship, this is compared with other categories of social relationship, such as family and community group participation throughout the thesis.

1.4.2. Friendship

Friendship is notoriously difficult to define, with many friendship scholars highlighting that as many definitions of friendship may exist as there are types of friends (Blieszner and Adams 1992). As varied as they are, it is possible to map trends across history in the ways that friendship, as a general social form, has been depicted and discussed (Pahl, 2000). Classical descriptions describe friendship as a 'moral' or 'virtuous' relationship type (Aristotle, 2004; Mullis, 2010) whereas pre-modern incarnations adopt a more practical definition with descriptions of friendship as a union for battle and/or business (Pahl, 2000). Contemporary understanding is based on a view of friendship that has one or more of the following features: it is voluntary, it is not instrumental (intimate), is equal, is reciprocal, and is a relationship type that tends to be positive and enjoyed by all parties (Graham, Allan, 2010).

This thesis does not, adopt an a priori definition of friendship but instead allows the participants, in each of the three research studies, to self-categorise the individuals in their social networks that are, in their opinion, their friends. As Blieszner and Adams state utilising a normatively derived definition of friendship a priori "is inadequate" (Blieszner and Adams, 1992 pg 8). The scale of variation between each individual's definitions of friendship means that this approach would risk a substantial misalignment between relationships the researcher identifies as friendships and those the participants define as friendships. Instead, the investigation of one's subjective understanding of friendship as a social form is adopted and defended throughout the thesis.

The first two thesis research studies explore the relationship between friendship and wellbeing across household compositions and friendship change across time (see chapters four and five). These studies are based on the secondary data analysis questions within U-Soc about a participant's "close friends". Here, the individual's that any participant defines as a 'close friend' are up to their own interpretation. The third research study explores friendship change and wellbeing during the

COVID-19 pandemic (see chapter six). This study allows participants to plot their own social network contacts (individuals important to their wellbeing) on a concentric circle social convoy model. Analysis is then conducted on the ties that are voluntarily described as friends. The nature of friendship means that it is likely that the participants will have different conceptions of friendship and therefore varied inclusion criteria.

This thesis starts from the position that the very act of denoting a social relationship as a 'friend' is interesting in and of itself and therefore the presence of ties described as such may have an impact on an individual's wellbeing, regardless of the variation in the structure or form of these ties. Furthermore, through the investigation of the nature of the relationships that have this ascribed 'friendship' status we can learn more about how older adults understand and value this category of social tie and its importance for wellbeing. This position does however come with a several caveats.

Firstly, it is important to note that this approach does not preclude an older adult from ascribing multiple social network categories to a single relationship. An individual may consider their partner to be their friend or their friend to be their family. Secondly, it is also not to say that the criterion used to differentiate a friend from a non-friend does not vary across time just as it does between individuals. Moreover, the investigation of friendship must be done within an understanding of one's wider social network. Wherever possible comparisons between friendships and other categories of social relationship have been drawn within this thesis.

This thesis is not primarily focused on WHY friendship networks are important for individual wellbeing, although this is covered tangentially. The focus of this research is the presence of friendship features their impact on older adult's wellbeing and how these change across household composition changes, across time and in response to external shocks (COVID-19).

1.4.3. Loneliness and Social Isolation

Loneliness and social isolation are not concepts central to this thesis but are often discussed in connection with the experience of having or not having friendships and are therefore concepts of tangential importance. Loneliness is a perceived lack of connection or meaningful interactions with others. It is subjective, reflecting an individual's personal feelings about the quantity and/or quality of their social relationships rather than the actual number of contacts or interactions they have (Gierveld et al., 2006; Perlman and Peplau, 1981). Scholars often distinguish between emotional and social loneliness (Weiss, 1973). The former refers to a state in which an individual feels they are lacking specific close relationships the latter is a perceived lack of belonging to larger groups or communities. Inadequate friendships could theoretically induce feelings of both emotional and/or social loneliness.

Social isolation is, in contrast, a term used to capture an actual lack of social relationships. The LSNS-6 (Lubben Social Network Scale) is a widely used measure of social isolation (Lubben, 1988). It treats individuals with a score below 12 (maximum score is 30) as being at risk of social isolation. This scale is an objective measure that counts the number of meaningful relationships an individual holds. Both loneliness and social isolation have been found in existing research to impact wellbeing, these effects have been found to be distinct, and they are likely operate through different causal pathways (Coyle and Dugan, 2012; Steptoe et al., 2013). You may feel lonely but have an objectively large social network, you may have a small social network but not feel lonely, and you may be both isolated and alone or not isolated and not alone.

Social isolation is also a term that has entered common parlance to describe the set of political and legal guidelines that restricted movement and behaviour in response to the COVID-19 pandemic. In this thesis the term 'social isolation' will be used to mean a lack of social relationships, and the terms 'social regulation', 'social restriction' or 'lockdown' to describe the measures used to control social contact

and reduce infection. This includes but is not limited to policies on social distancing, mask wearing, shielding, post-infection isolation, and curfews on public spaces.

To conclude, this thesis is concerned primarily with exploring friendships, or a lack of friendship ties *not* loneliness or social isolation, although these concepts are frequently referred to throughout. Individuals in a state of friendlessness, therefore, may or may not have other close social network ties such as family member(s) or romantic partner(s).

1.4.4. Wellbeing

'Individual subjective wellbeing' (hereafter referred to as wellbeing) is an umbrella term used in this thesis to capture how an individual feels, functions and evaluates their own life. This is distinguished from the drivers of wellbeing which are understood to be the resources and/or external conditions that an individual may or may not have that create conditions conducive for high wellbeing (New Economics Foundation, 2012). In this thesis one's friendship network is understood to be a driver of wellbeing rather than a wellbeing component (*ibid*). These drivers of wellbeing include external material, social and personal conditions (such as health and wealth), as well as individual attributes and coping mechanisms such as optimism, personal resilience, and self-esteem. These drivers are important factors to control for in analysis of the impact of friendship on wellbeing.

Several distinct concepts can be identified within the umbrella term of subjective wellbeing: eudemonic wellbeing, hedonic wellbeing (positive and negative affect) and evaluative wellbeing (Stone and Mackie, 2014). Life satisfaction, the measure adopted in this thesis, is used to capture subjective evaluative wellbeing.

Eudemonic wellbeing focusses on an individual's level of psychological functioning including concepts such as meaning in life, purpose, autonomy, competence, self-realization, mindfulness, self-acceptance (and) authenticity (Adler and Seligman, 2016; Ryff and Keyes, 1995). Hedonic wellbeing, in contrast, is a measure of the

presence and/or absence of positive and/or negative emotions, often captured with questions around experiences of anxiety or happiness (Stone and Mackie, 2014). This is also often termed positive and negative affect. It is important to note that an individual may simultaneously experience positive and negative emotions, these states are therefore not mutually exclusive (Lee and Oguzoglu, 2007).

Evaluative wellbeing is a measure of cognitive rather than emotive wellbeing. Evaluative wellbeing involves the judgements that an individual derives about their own wellbeing and can be conceptualised as an interaction between an individual's experiences of hedonic and eudemonic wellbeing and their expectations of their wellbeing experience. The presence of wealth, for example, may make an individual happy (hedonic wellbeing) and contribute to an individual's sense of mastery (eudemonic wellbeing). Yet, an individual who is surrounded by many other wealthy individuals and/or perhaps has previous experiences of wealth, may have high expectations for the presence of wealth in their life. As a result, the presence of wealth as an external condition, and the impact that this condition may have on one's emotive wellbeing will be differently translated into an individual's evaluative wellbeing. Evaluative wellbeing has been found to be a good measure of an individual's longer-term outlook on their lives as a whole, whereas hedonic measures have been found to be more influenced by the environment and context of people's lives (Stone and Mackie, 2014). A measure of evaluative subjective wellbeing is used in this thesis to transcend the micro daily emotional states to capture a deeper and longer-term assessment of an individual's wellbeing. The conceptual framework for understanding wellbeing, adopted in this thesis, is outlined diagrammatically below.

Figure 1.1: Conceptual Framework for Subjective Wellbeing
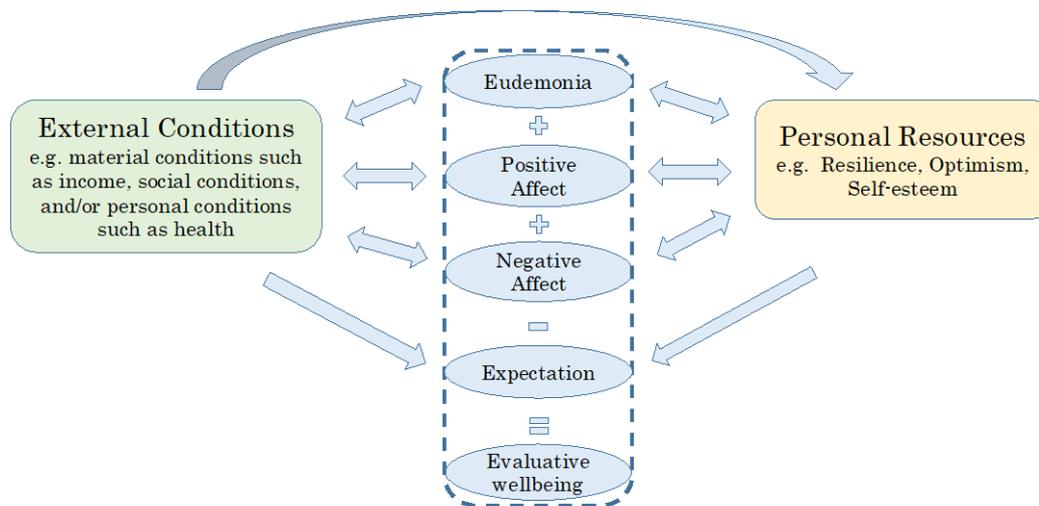
Source: Author's own adapted from New Economics Foundation (2012) 'Measuring-Wellbeing: A guide for Practitioners'.

A single measure of life satisfaction is adopted within this thesis to capture subjective evaluative wellbeing. The terms wellbeing, subjective wellbeing, and life satisfaction are used interchangeably throughout the thesis. The next section will continue to justify the focus on older adults and later life adopted throughout the thesis.

1.4.5.   Ageing and Later life

Ageing can be defined as the mechanisms of both individual and social change across time. These mechanisms are numerous and often non-linear (Bernard et al., 2020). Gerontology has, since its conception, been a multidisciplinary field (*ibid)*. Traditionally formed of biologists, psychologists, and sociologists, then joined by those in applied disciplines. Across this history, gerontologists have contributed discussions on all the many ways that people can age, ranging from cellular ageing to social ageing (*ibid*). A single individual may be conceptualised as ageing in different ways and at different speeds across different domains all at the same time. One example of this is the discrepancy between older adults subjective and chronological ages (Barrett, 2005; Barrett and Montepare, 2015; Uotinen et al.,

2006; Westerhof and Barrett, 2005). Older adults rarely recognise themselves as being as 'old' and frequently report feeling 'younger' than their chronological ages may suggest.

This phenomenon is also reflective of the fact that, as well as being an individual experience, we can also understand ageing as woven into our systems of social organisation and stratification. One is incentivised to identify as younger than they are, when older age is attached to social stigmas. Ageing is an "enduring feature of social structures even if it is constantly changing feature of individuals" (Dannefer and Phillipson, 2010). As a result, age-based labels are inextricably connected to the power hierarchies within any given society, and age-based experiences vary between and within social, cultural, and political contexts. The conclusion adopted within this thesis cannot be separated from the cultural and political contexts of ageing in contemporary Britain and should be interpreted as such.

To acknowledge that ageing within individuals is a process rather than a fixed state, terms such as 'old**er** adults' and 'lat**er** life' have been adopted throughout this thesis. These are relative in their framing rather than the more fixed alternatives of 'old adults' or 'late life'. Academic research has been included and discussed throughout the thesis regardless of the chronological age of the samples used, as long as the research findings were still considered to still be of relevance to our understanding of later life or ageing processes. Where relevant the chronological age of the samples in this research have been highlighted.

The first two thesis studies have analytical samples of individuals 60 years or older. This is to allow for friendship-based changes around retirement to be captured and analysed. Despite this, the author, recognises that there is no single chronological age in which participants across any given analytical sample will unanimously recognise as the beginning of later life. Moreover, retirement itself although more common around national retirement age is not a uniformly experienced life event. Future research should explore how friendship and wellbeing patterns develop across the entire life course.

1.4.6. Household Composition

Household composition is a term used to refer to the person(s) permanently living within a single residence. Individuals living within communal residential establishments are not explored within this thesis. Household composition here is used to denote the number and types of individuals living within 'regular' or non-age specific households. Four types of household composition are explored in this research: those who live alone, those who live with a marital partner, those who live with others and those who live with a marital partner and others.

There is a growing academic interest in couples in later life who are 'living apart together', and research has estimated that as many as 10% of adult populations across Western Europe, North America and Australasia (Duncan et al., 2014) may live in these household forms. In this thesis sample, most married participants report living with their partner. Non-cohabiting married individuals are, therefore, too small a group to warrant statistical analysis. Future research should explore the importance of friendship on wellbeing for this group specifically.

Although 'household composition' has a straightforward definition its use within this thesis is slightly more complex. Following the assumption that most individuals will hold a social relationship with the people they live with, household composition can be a good indicator of residential social network. An association can also be identified between chronological age and household composition, suggesting that household composition could be a good indicator of one's life stage more broadly. For example, across a nationally representative sample 19% of 60–65-year-olds are found to live alone (red) compared to 61% of individuals over the age of 86 (see figure 1.2). In fact, among individuals over the age of 86, living alone surpasses living with a partner as the most populous household composition category. These trends could be indicative of life events such as spousal bereavement. Other trends can also be identified. The proportion of individuals who report living with a partner

and others (Blue) is found to reduce with increasing age categories. The proportion of people in this group halves from 23% of 60–65-year-olds to 12% of 66–70-year-olds. It then gradually reduces to just 2% of individuals over the age of 86. This could be evidence of a reduction in the number of individuals who live with their adult children with age, a group who are colloquially termed empty-nesters. Interestingly, the proportion of individuals who report living with others only (Yellow), is largest in early and late later stages of later life. This could be indicative of older adult's living with care-related household companions in later stages of later life.

Figure 1.2: Frequency (%) of individuals in household compositions categories by Age
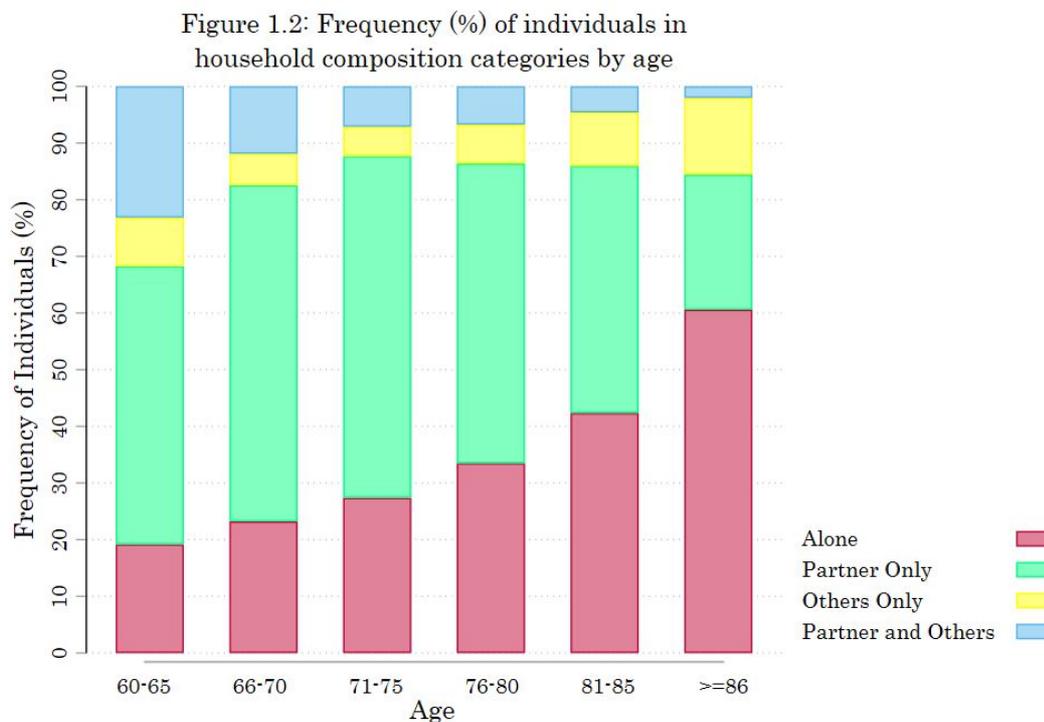
Figure 1.2: Frequency (%) of individuals in household composition categories by age

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Outputs are not weighted

Although these are cross-sectional descriptive statistics and cannot be used as evidence of transitions across time, the proportions of individuals in each household composition group demonstrate clear age-based patterns. These trends are worth considering when interpreting the results in thesis study one and two

(see chapter four and five). Appendix B contains further information about the demographics of those defined as 'others' within these household composition groups. Additional research is needed to explore household composition transitions longitudinally and the extent to which these reflect life stage events such as bereavement and changing care needs. Although this is not the focus of this thesis, it is important to note that one's household composition may reflect wider factors indicative of their 'stage of life'.

1.4.7.   Ageing in Place

'Ageing in place' is a term frequently used within gerontology and social policy to refer to older adults that have not transitioned into age specific housing (residential or nursing care) and instead remain living in their homes with some degree of personal independence (Yarker et al., 2024). More specifically, it has also been used to refer to older adults that do not relocate home or neighbourhood at all in later life, thus maintaining a sense of long-term residential immobility. It is this latter definition that is used within the thesis. It is operationalised as individuals that have maintained residence in a single neighbourhood (Lower Super Output Area) for 10 or more years (see section 3.3.2, 3.4.2 and 3.5.3).

Older adults often report a desire to stay in their homes for as long as they can (Wiles et al., 2012), and research cites several benefits to ageing in place. These range from increased autonomy and psychological comfort (Gilleard et al., 2007) to reductions in healthcare expenditure (Chappell et al., 2004). Many policy positions, such as the expansion of 'virtual hospital wards', implicitly encourage individuals to remain in their own homes ("NHS England » What is a virtual ward?," n.d.). Yet, research has also highlighted the negative consequences of ageing in place. When communities change long-term residents can feel socially excluded (Dahlberg, 2020) and a lack of appropriate and safe housing stock can lead to the exacerbation of health conditions associated with later life (Centre for Ageing Better, 2024). Places (homes and neighbourhoods) have an unequal capacity to support positive

aging experiences exacerbating pre-existing disadvantages and reproducing inequalities (Yarker et al., 2024). "Aging in place is thus an ambiguous position, signifying rootedness as well as rigidity. As people grow older, they may be grounded by their area of residence or they may be trapped by it" (Gilleard et al., 2007, p.591).

These wellbeing consequences of ageing in place make it an important variable to consider within this thesis. Unfortunately, the first thesis study is not able to control for the length of time an individual has been resident in their home or the suitability of this home. The sample does, however, exclude individuals in communal living establishment. The second thesis study explores the impact of neighbourhood relocation on wellbeing. Individuals who move Lower Super Output Area within the study observation period (six years) are classified as having relocated neighbourhoods and as not having 'aged in place'. Aging in place is also used as an exclusion criterion for participation in Study Three. Whereby only individuals who have lived in the neighbourhood and their current residence for 10 years prior to interview are recruited for the study.

1.4.8. Resilience

The word 'resilience' comes from the latin to 'jump back' or 'recover' (Manyena, 2006). Masten, more specifically, defines resilience as "the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development" (Masten, 2014). The broad applicability of this concept means that resilience is used to explain adaption processes across varying systems at many interacting levels (*ibid*). There are schools of literature on the resilience of biological systems, the resilience of organisations, and the resilience of individuals, all exploring how the systems in question react and adapt to a range of threats (*ibid*). Resilience is therefore not understood to be an all-consuming personal attribute but a domain-specific and changeable trait (Southwick et al., 2014). A person, or system, may be resilient at different times in different life domains (*ibid*).

This thesis considers resilience within the domain of friendship at three levels, the level of the individual, the level of the relationship and the level of the network.

When conceptualising a friendship network as a 'dynamic system', its 'function' can be understood as its ability to fulfil an individual's wellbeing needs. A resilient friendship network is, therefore, one that continues to provide this wellbeing benefit even when the wellbeing needs of the individual change or the relationships within the network are threatened. This does not mean that the network will remain the same, in fact adaption is a key part of resilience, but that it is able to continue to meet the wellbeing needs of the individual (Southwick et al., 2014). For example, in response to the loss of a friend, a resilient friendship network may generate a replacement friendship or adapt remaining friendships to fill this deficit.

Alongside friendship network resilience, the thesis also considers how a single relationship within this network might itself be resilient (here termed relational resilience). A relationship that can endure and continue to provide wellbeing benefits, despite changes to the needs of the individuals or the structure of the relationship is defined as being high in resilience. One example of this, is the development of new modes of communication following a disruption to established patterns of interaction. The COVID-19 lockdown policies, home relocation and/or driving cessation are all examples of such threats.

The final level of friendship resilience, that underpins the above two, refers to the extent to which a single individual can bounce back from adversity, stress, or trauma (Southwick et al., 2014). This is often termed internal or psychological resilience, but in this thesis the term 'personal resilience' is used. If an older adult is high in personal resilience, they can maintain a positive outlook and prevent negative events or situations from impacting their own wellbeing or restricting their ability to respond to the scenario (Southwick et al., 2014).

These levels of friendship resilience are closely inter-related but distinct, nonetheless. An individual may have high network resilience by having lots of

different relationships to draw upon in different circumstances but have low relational resilience if the constituent relationships are not easily adapted when necessary. Conversely an individual may have just one friendship that is highly adaptable, meaning that their network is not resilient to the loss of this tie despite its adaptability. One could also have high network and relational resilience but have low personal resilience meaning that any conflict or relationship dissolution would be difficult to manage and have a profound wellbeing impact.

It is important to recognise the role of culture and context to the ways individuals both understand and practice adaption behaviours (Ungar, 2012). As a result, Appendix V provides a detailed description of the geographic and demographic context of the study location for the third research study and the implications of this study location on the results are referenced throughout. The focus on individual wellbeing as a primary function of a friendship network system, for example, is potentially reflective of the individualised culture of the British context.

The origins of resilience science lie in the investigation of childhood responses to traumatic events such as environmental or humanitarian disaster and war (Masten, 2014). In this thesis, friendship network resilience friendship relational resilience and personal resilience are primarily examined in the context of the threats poses by the COVID-19 pandemic and the related social-distancing measures. However, resilience threats are not only understood as these one-off traumatic events but can also be chronic everyday sources of stress or change (Southwick et al., 2014). The following section will continue to discuss the context of the COVID-19 pandemic in more depth.

1.5.   The COVID-19 thesis context

The first cases of the SARS-CoV-2 virus (otherwise known as COVID-19 or coronavirus) were identified by the World Health Organisation in December of 2019 (WHO, 2021). A pandemic was declared on the 11th of March (WHO, 2021), and the British government announced a national lock-down in England on the 23rd of the

same month (Johnson, 2020). Policies around COVID-19 varied between the devolved nations, and therefore the rules and restrictions in Scotland, Wales and Northern Ireland differed to those implemented by the British Government in England. Although the first two thesis studies utilise a sample that is representative of the United Kingdom, the third study explores the experiences of individuals in one community in England during the pandemic (Barton-on-sea). Descriptions of both the COVID-19 context in England in general and in Barton-on-sea specifically are provided below.

The first lock-down mandated that people could only leave their households for: necessities; one form of exercise per day; a medical need, to care for a vulnerable person, and/or to travel to or from work where this was necessary and could not be done at home. All non-essential socialisations places were closed, including libraries, places of worship, and hospitality venues. Individuals with particular health vulnerabilities were told to stay home 'all of the time' under a shielding policy that was introduced from the 21st of March (Department for Health and Social Care and UK Health Security Agency (UKHSA), 2020).

After around two months of restrictions these lock-down policies began to incrementally relax. On the 10th of May, people were able to exercise multiple times a day and encouraged to go to work if they could not do so at home. Support bubbles were introduced for single adult households in June and some venues such as hairdressers, pubs and gyms re-opened from the 4th of July. Shielding policies were relaxed from the 6th of July and ended on the 1st of August.

As cases began to rise again moving into the winter of 2020 lock-down policies like those implemented in March were once again mandated across England. September saw the introduction of 'the rule of six' limiting socialisation to groups of six, and in October the British Government announced a national tier system in which local authority areas were subject to various levels of social restriction (Appendix P). On the 5th of November a new 4-week lockdown was announced (Blackall, 2020). This was the same as the first lockdown with a few notable

exceptions. The government introduced 'support bubbles', did not take steps to close schools and childcare services, did not reinstate the shielding scheme and allowed individuals to exercise outside with one person from another household.

Recruitment and data collection for the third research study (Chapter Six) was conducted just before the start of this four-week winter lockdown (19/10/20 – 5/11/20). So, this PhD and the voices articulated in the third research study encapsulate the mood of a community gearing up for a second national lock-down, after eight months of social restriction. The participants reflect on the changes to their friendship networks throughout this eight-month pandemic period. Section 3.5 in the methods chapter includes a discussion of the methodological complications of collecting data during this period. The substantive implications of the pandemic context on the results are highlighted in chapters Six.

1.6.   Conclusion

This introductory chapter summarises the scope of this thesis and the wider academic and policy context in which it sits (section 1.1, 1.2 and 1.3). It defines and justifies the key terms and conceptual approaches used within the thesis (section 1.4) and provides some political context to the events of the COVID-19 pandemic in England. The next chapter, the thesis literature review, continues to situate the thesis research within the wider literature on friendship and wellbeing. More specifically the chapter explores: the philosophical and methodological history of wellbeing research (section 2.2); the existing body of knowledge on friendship/personal networks and wellbeing (section 2.3); the literature on how friendship and personal networks change across the life course (section 2.4); and an overview of the drivers of social network change, including the theoretical explanations and the impact of the COVID-19 pandemic on social connections (section 2.5). This thesis will then continue to discuss the methodology of each of the three research studies (chapter 3) before outlining the results of these

(chapters 4, 5 and 6) and the broader conclusions of these findings (chapter 7 and 8).

2. <u>Literature Review</u>

2.1.   Chapter Introduction

This thesis draws utilises literature on the dynamics of social connection and the causes of high wellbeing. These topics have been of interest to scholars for centuries. From Aristotle to Robert Putnam, Goffman's dramaturgical analysis to Carstensen's Socio-emotional selectivity theory, numerous scholars across disciplines have sought to understand what makes humans flourish and the social nature of our humanity. This chapter does not, therefore, attempt to be exhaustive but instead summarises and discusses aspects of this literature in four sections, (2.2 – 2.5) outlined in turn below.

Wellbeing is an elusive concept that has historically evaded definition and measurement. Therefore, the first section of this literature review (2.2) builds on the definition of wellbeing outlined in subsection 1.4.4 to discuss how this concept has been defined and measured historically. This section highlights how its use in social science research has been vindicated through the development of tools that allow for its robust measurement and demonstrates how the multi methods approach in this thesis allows for unique contributions to our working definitions of wellbeing. The section continues to outline the research on wellbeing change in later life and wellbeing change in response to the COVID-19 Pandemic. Both are important confounding factors to the association between social network change and wellbeing during COVID-19.

Section 2.3, discusses the research that has sought to understand the pathways and mechanisms through which one's social connections, including their friendships, impact their wellbeing. This section explores the types of social relationship and social network found to be of greatest benefit to individual wellbeing. Conversely, the literature on the negative impact of social isolation is outlined. The thesis focusses on one specific relationship type (late life friendship), filling a research gap in a wider knowledge base that has primarily explored global social networks or

familial or romantic ties. This provides a critical contribution to our understanding of how social relationships impact wellbeing in later life, the types of relationship most beneficial to individual wellbeing, and those most vulnerable to social isolation.

The penultimate section of the chapter, section 2.4, focuses on the evidence of observed social network change in later life. It outlines the prominent hypotheses about social network change in later life (that social networks decrease in size and become increasingly family orientated) and sets the case for why these may no longer be valid. This, in turn, justifies the focus on friendship adopted throughout the thesis. This section also explores the, demographic and technological macro social trends that may have impacted the ways that older adults friendship networks are formed.

The final section (2.5) continues to outline the debates surrounding the drivers of social network change in later life using a series of established theoretical approaches to do so. This section includes a discussion of the impact of the COVID-19 pandemic on social interaction. This thesis is uniquely situated to be able to investigate friendship change because it can examine both within individual change across time (study two) and can examine friendship change during COVID-19 (study three). These provide key contributions to the literature.

Taken as a whole, the chapter aims to situate the thesis within the wider literature, as well as within the context of demographic trends and historical events that justify the relevance of the research for the development of policy interventions.

2.2.   Subjective Wellbeing in Later Life

Wellbeing science involves the investigation of the factors and conditions necessary for human flourishing. It is an applied scientific discipline that holds at its core the dual assumptions that the pursuit of human wellbeing is both a worthwhile objective and an objective that can be improved through the management of the

social, political, and/or environmental context in which an individual resides. These assertions have not historically been accepted but are now gaining increasing dominance. With these changes a recent body of literature on the nature of wellbeing change has emerged. The literature on wellbeing changes in response to a triggering event, across later life and in response to the COVID-19 pandemic is outlined below.

2.2.1. The pursuit of wellbeing

The use of 'human flourishing' or 'individual wellbeing' as the high order outcome of interest for researchers and policy makers has seen rising popularity. Historically, it has been measures of material prosperity rather than individual fulfilment have dominated national and international policy agendas. Yet, as researchers found that advances in relative wealth and quality of life did not consistently or clearly translate into reductions in inequality or increased life satisfaction (Easterlin, 2003; Scott, 2012 pg.3), policy makers were prompted to question the dominant measures of prosperity. This led to a boom in research around the conditions necessary for human wellbeing, and the appropriate tools to measure this. The development of individual-level subjective wellbeing measures such as life satisfaction and the WEMWBS allowed researchers to apply a robust analysis the measurement and design of these policy approaches (New Economics Foundation, 2012).

Both national and international bodies have, in the last decade, increasingly recognised this approach. The Office for National Statistics now regularly analyses personal subjective wellbeing measures (Allin and Hand, 2017) and the OECD has published extensive guidance on the measurement and use of these measures (OECD, 2013). Internationally, The Government of New Zealand spearheaded the way with the announcement of a wellbeing budget and strategy based on subjective wellbeing indices (New Zealand Government, 2021) and domestically organisations such as The What Works Centre for Wellbeing hold increasing

political clout (https://whatworkswellbeing.org/). Within social gerontology, there is also a movement to recognise individual subjective wellbeing as an 'ultimate outcome' measure. Where medical gerontologists and geriatricians have pursued the extension of human life, many social gerontologists see their task as to support the creation of a society in which older adults 'live well' as well as 'live long'. This thesis sits firmly within this school of thought and individual subjective wellbeing sits at the heart of the: research questions addressed, the methodological design adopted, and the conclusions discussed. For example, wealth, health, and social relationships are not prioritised as research outcomes in and of themselves but understood to be important levers through which to understand and therefore direct an improvement in human wellbeing.

The thesis is also able to contribute to the body of literature on the measurement of subjective wellbeing in later life. The use of a multi methods approach, whereby quantitative wellbeing measures (satisfaction with life scale) are repeated in a follow up qualitative study, allows for a critical reflection of the ways that the participants interpret these widely adopted wellbeing measures.

2.2.1. Wellbeing changes in later life

Wellbeing science has contributed several findings to our understanding of later life. It is now broadly accepted that wellbeing changes across the life course in a relatively consistent u-curve (Lopez Ulloa, B. F. et al., 2013). Wellbeing reduces in early life, reaches a nexus in midlife and then continues to rise again, before finding a plateaux in late late-life (Gwozdz and Sousa-Poza, 2009).

One explanation for this curve is to do with the life course events that tend to be correlated with these chronological life stages. Early later life is, for most, a period in which individuals find they are no longer burdened by childcare responsibilities, nor looking after elderly relatives. They may find that retirement brings greater leisure opportunities and financial freedoms, and they may not yet be restricted by

their health. Alternative theories highlight the role of expectation in evaluative measures of wellbeing (Schwandt, 2014) (see section 1.3.4). In these explanations the life course wellbeing curve is, in part, explained by misaligned expectations and experiences (*ibid*). In this framework, mid-life is experienced as a period in which the expectations of youth meet the reality of experience, leading to unmet wellbeing expectations (*ibid*). In contrast, later life is a period in which individuals find their quality of life is better and their lives longer than previous generations[1], leading to an inflation of wellbeing in early later life (*ibid*). If this second narrative holds true, it is plausible that as life expectancy increases, successive generations may have higher expectations for their retirements and with this, we may observe reductions in late life wellbeing despite increases in quality of life.

Experiences of wellbeing in later life are, however, very diverse (Lopez Ulloa, B. F. et al., 2013). Cumulative advantage/disadvantage theory draws attention to the fact that structural and individual level factors have a compounding effect across an individual's life and that this means that inequalities can increase as individuals grow older (Dannefer, 2003). In fact, individuals living in the least deprived areas of the UK on average enjoy 20 extra years in good health than those living in the most deprived areas (Office for National Statistics (ONS), 2021b). It is, therefore, important that any study of wellbeing in later life recognises this diversity of experience among older adults.

Research Study three, (Chapter 6) seeks to explore the experiences of older adults who are economically advantaged but whom may or may not have strong social networks. Research Study Two, (Chapter 5) in contrast explores the experiences of those who are socially isolated, but who represent a cross section of society in all other dimensions. Presented together these studies therefore aim to explore the breadth of wellbeing experience in later life. Recognition of the diversity of later life

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[1] It is however important to note that these trends are changing, and the most recent data has seen a stall in life-expectancy.

experiences are emphasised throughout and caution should be applied when generalising the thesis results across older adults more broadly.

2.2.2. Wellbeing changes in response to a triggering event

In early wellbeing research the premise that you could identify prolonged wellbeing change in response to changes in one's socio-environmental context was doubted. Hedonic adaption or hedonic treadmill theories, suggested that happiness tends to revert to a baseline after positive or negative events (Brickman et al., 1978; Brickman and Campbell, 1971). This was hypothesised to work through two psychological processes: contrast, and habituation (*ibid*). Contrast occurs when individuals find the more mundane experiences in their life either less or more impactful on their wellbeing when held in contrast with the impact of a major event. For example, if someone wins the lottery the other events in their life that would previously have bought them joy now feel insignificant. Habituation occurs when individuals then become accustomed to either the benefits or difficulties of their new life (*ibid*).

Despite gaining some traction when first posed, these theories have since been refuted. Critics argue that the so called 'happiness baseline' is positive rather than neutral, that these baselines in fact vary between individuals based on personality predispositions, that adaption rates vary considerably, and that this singular conception of 'happiness' disguises nuanced wellbeing change across multiple wellbeing components (Diener et al., 2006). Individuals may experience an improvement in their evaluative wellbeing but a reduction in their affective wellbeing presenting the overall perception of wellbeing stability. Moreover, modern research has found that people's long-term wellbeing can be changed despite an individual's ability to 'adapt' or 'habituate' to changing circumstances.

The thesis hypothesises, that a change in one's friendship network can have an impact on one's wellbeing across time, sits on the back of this wider research that

shows that subjective wellbeing is both modifiable and measurable. One triggering event, the COVID-19 pandemic, is explored in depth throughout the thesis. The following section continues to outline the research on the impact of the COVID-19 pandemic on individual subjective wellbeing.

2.2.3.   Wellbeing changes during the COVID-19 Pandemic

From the outset, public commentators, media outlets, and government officials warned that the pandemic and the government lock-down policies it prompted might seriously threaten the mental and emotional wellbeing of the population. Both early descriptive statistics and subsequent peer-reviewed publications have since corroborated these concerns. There is strong evidence that the wellbeing of the British public did, on average, reduce during the COVID-19 pandemic. Research by Pierce et. al. (2020), Etheridge and Spantig (2020) and Banks and Xu (2020) utilised data in the UKHLS COVID survey to assess changes in wellbeing (GHQ-12) at a population level. They found that the prevalence of clinically significant levels of mental distress rose from 18.9% in 2018/19 to 27.3% in April 2020. These findings were confirmed by Gray et al. who measured wellbeing using the Warwick-Edinburgh Mental Wellbeing Survey (WEMWBS) and found a significant and large reduction in wellbeing in June and July of 2020 when compared to the same period in 2019.

Average ratings across all measures of personal wellbeing recorded by the ONS hit a post pandemic low in the year ending March 2021, and despite some recovery, the subsequent year (ending March 2022) average wellbeing rates remained below pre-pandemic levels (see figure 2.1).

Figure 2.1: UK Personal Wellbeing Estimates (Annual) from 2011 to 2022

Figure 2.1: Average personal wellbeing score by year, UK

*Average (mean) ratings, score out of ten. Y axis is broken, meaning it does not start at one. Years ending in March.
Source: Graph created by author using data from the Office for National Statistics(Office for National Statistics (ONS), 2022b)

The trends presented in figure 2.1 are based on nationally representative samples of the UK population. Respondents are asked the following questions, on a scale of 0-10, annually: "Overall, how satisfied are you with your lives nowadays" (Green line); "Overall, to what extent do you feel that things that you do in your life are worthwhile?" (Red line); "How happy do you feel yesterday?" (Blue line). The y axis in figure 2.1 does not start at 0. When comparing the average (mean) scores to each of these questions across time a steady increase across all measures is found from the year ending March 2012 to the year ending March 2019. In just two years these gains are lost and despite improvements the scores for the year 2021/22 these do not return to pre-pandemic highs. This data highlights how the COVID-19 pandemic is a unique opportunity to research individual wellbeing to improve public policy, a key aim of this thesis.

The COVID-19 Pandemic did not, however, impact wellbeing evenly, and considerable variation can be found between demographic groups. Children, young

people, and women were found to disproportionately experience a reduction in their wellbeing during the pandemic (Pierce et al, 2020; Gray et al 2020; Banks and Xu 2020). These are groups that saw their daily routines most significantly disrupted during the national lockdowns. Mandated school closures separated young people from their peer networks, and mothers were more likely than fathers to take on the extra burden of full-time childcare responsibilities alongside employment (Sevilla and Smith, 2020). It is easy to understand how these major disruptions and additional responsibilities might negatively impact the wellbeing of these sub-groups.

Older adults, on average, experienced more stable and less negative mental health outcomes during the pandemic than the above sub-groups (Holingue et al., 2020). This is arguably an unintuitive finding as young adults were, on average, far less likely to be admitted to hospital and/or to die if they contracted COVID-19, than older adults (Atkins et al., 2020; WHO, 2019). Moreover, because of the significant health risks posed to older adults, they were in many cases subjective to more severe lock-down policies than those in other age groups. Fifty-nine per cent of those characterised as clinically extremely vulnerable and therefore encouraged to follow the 'shielding' policies were aged over 60 (NHS Digital, 2021). These comparatively more stable wellbeing outcomes among older adults have been attributed to several factors, each discussed in turn below.

Older adults tended to report higher levels of emotional wellbeing pre-pandemic (Charles and Carstensen, 2010) potentially meaning that they held a certain 'wellbeing buffer' to the negative impacts of the pandemic. Moreover, some have argued that older adults approached the pandemic with greater personal resilience, built through previous experiences of global and national crises (McKinlay et al., 2021). In fact, many media narratives likened the COVID-19 Pandemic to the Second World War (Panzeri et al., 2021) and noted that a generation of veterans were perhaps most adept at managing sudden and life-threatening world events. Interestingly, research has found that one's subjective interpretation of their own loneliness experience is related to the coping mechanism they adopt and, in turn,

their long-term loneliness trajectory (Morgan and Burholt, 2020a). Individuals that see their experience as being modifiable are more likely to respond with problem-focused coping strategies that work to improve the quality or quantity of their social relationships rather than emotion-focused coping strategies that simply focus on reducing the emotional distress that a state of loneliness can cause (Morgan and Burholt, 2020b). One can hypothesise that a cohort that has been dislocated from loved one's and experienced major global disruption may be more likely to interpret their personal circumstances following the COVID-19 pandemic as temporary and modifiable.

Research has also found that household size and occupation type were associated with wellbeing during the first lockdown (April to May 2020) (Chen and Wang, 2021). ONS data finds that households where the head is retired, tend to be wealthier, with lower expenditure and a more stable primary income source than other household groups (Office for National Statistics (ONS), 2022c). Households with financial wealth and stable living situations may have been less likely to have experienced disruptions to their living arrangements, working patterns and/or financial security during the pandemic. Research has also found that older age groups perceived their risk of running out of money during the pandemic as being lower than younger groups (Bruine de Bruin, 2021).

It is important to note, however, that later life experiences are diverse. ONS data has found that as a result of the pandemic, 1 in 8 (13%) of workers aged 50 years and over say they have changed their retirement plans, with 5% saying that they would retire earlier but 8% planning to retire later (Office for National Statistics (ONS), 2021c). For those who are retiring later, one may presume they may be doing so due to a degree of pandemic-induced financial vulnerability. Moreover, research has found that the negative wellbeing impact of the pandemic was far greater for individuals that regularly used social care systems and/or were involved in care work, such as individuals living with dementia or caring for individual living with dementia (Giebel et al., 2021; Hanna et al., 2021).

Unfortunately, the examination of the wellbeing impact of the pandemic on older adults with these financial or health system wellbeing-vulnerabilities, is beyond the scope of this thesis. The first two research studies utilise a nationally representative sample of older adults but paint a picture of pre-pandemic wellbeing. The third research study captures a view of wellbeing in the aftermath of the pandemic; however, the majority of the participants in this third study are retired, independently living, homeowners who are not in receipt of social or nursing care. Section 3.5.3 provides a full discussion of the demographics of the sample in this third research study. This sample was selected purposefully to be able to better isolate the impact of the changes to older adults' friendship patterns on their wellbeing. The assumption being that in a sample in which all other wellbeing vulnerabilities are presumed to be minimal, the impact of a change in one's social context may be more easily identified and discussed. This is a critical contribution to the literature. Future research should apply the lessons from this study to investigate the importance of friendships and friendship change among other groups of older adults.

2.3.   Social Connection and Wellbeing

2.3.1.   The Impact of Social Networks on Wellbeing

The research studies that highlight the importance of social relationships on individual wellbeing are numerous. Social networks that are large (Baxter et al., 1998; Cable et al., 2013; Fuller-Iglesias, 2015; McLaughlin et al., 2011; Netuveli et al., 2006; Rafnsson et al., 2015; Walen and Lachman, 2000), that one interacts with frequently (Phongsavan et al., 2013), and that live nearby (Van der Pers et al., 2015) have been found to be beneficial for high subjective wellbeing. Likewise, individuals with less-integrated social networks have a lower likelihood of high wellbeing scores (Golden et al., 2009; Litwin, 2012, 2001; Thiyagarajan et al., 2014), and these findings are supported by parallel bodies of evidence on the negative role that

loneliness and social isolation have on wellbeing (Mellor et al., 2008; Szcześniak et al., 2020).

Numerous studies have discussed how people tend to form friendships with individuals that are like themselves. This could be in terms of age (Hagestad and Uhlenberg, 2006) or ethnicity (Leszczensky and Pink, 2019), among other factors. Exposure effects mean that individuals are more likely to meet people who socialise in similar spaces to themselves (these spaces are socially stratified), but research has also suggested that people tend to deliberately seek friendships with individuals similar to themselves, this is termed homophily (Lazarfeld and Merton, 1954; Louch, 2000; Mcpherson and Smith-Lovin, 2001).

Homophilic friendship networks tend to be primarily associated with wellbeing gains (Block and Grund, 2014). Friends that share characteristics can provide one another a sense of social belonging and reinforce aspects of their identities. Moreover, a friendship network comprised of individuals with similar life experiences may be able to buffer the negative impact of triggering events (Krause and Borawski-Clark, 1994). For example, having friends of a similar age to one-self may provide space for mutual understanding, empathy, and/or advice around age-specific life course experiences, such as retirement, bereavement or home relocation.

However, there is also research that highlights that there are wellbeing benefits to bridging as well as bonding social network contacts (Putnam and Putnam, 2000). Friendships with individuals from different socio-economic or cultural backgrounds may improve someone ability to access resources, support, and opportunities unavailable within their own social network grouping (*ibid*). For example, having a friendship network that is comprised of both older and younger adults may provide opportunities for inter-generational learning and mutual exchanges of support. Moreover, age integration has been associated with reductions in ageist attitudes, discrimination and the marginalisation of older adults (Hagestad and Uhlenberg, 2006; Leedahl et al., 2020).

Research by O'Dare, Timonen and Conlon (2021) provide an interesting reframing of the debates surrounding intergenerational homophily in friendships. They propose a view of a 'homophily of doing-and-being' (O'Dare et al., 2021). Here, despite age differences, individuals defined friendship based 'sameness' in terms of the activities or pursuits they enjoy 'doing' and 'being' people with similar values attitudes and approaches. This highlights, that 'sameness' is multifaceted and that research into homophily should not fall into a trap of presuming uniform similarity and difference based on social categories such as age, gender and ethnicity.

In conclusion, there are numerous processes that explain the correlation between the structural features of a friendship network such as the number of ties the geographic proximity of these ties and their similarity to these ties to an individual with subjective wellbeing outcomes (Thoits, 2011). Actual transmissions of support, as well as the belief that one has support to potentially call upon have wellbeing benefits, alongside feelings of belonging and identity are also example wellbeing mechanisms (Muñoz-Bermejo et al., 2020) (Krause and Borawski-Clark, 1994). Considering these mechanisms, it is unsurprising that the presence of large, geographically proximal networks, with which one frequently interacts, are associated with high wellbeing. The more ties who live nearby, the more likely one is to perceive that they have people they could call upon in times of need.

Research has suggested, that amongst all these structural features, it is the quality not the quantity of social ties that is of greatest importance. This is epitomised by research on the circumstances in which relationships exert a negative role on wellbeing. A large proximal network is not beneficial if interactions with its members are chracterised by conflict, distrust and/or disharmony (Bowling, 1991). For example, research has found that participation in a romantic relationship in which one believes that there is an unequal transmission of support will reduce rather than boost their wellbeing (Schafer, 1985) and persistant marital strain has a greater negative effect on mental health than divorce (Robbins, 1983). It is, therefore, important when examining the impact of the structural features of a

social relationship or network on wellbeing, to understand that these are only important in so far as they promote the underlying relationship processes (i.e., the thoughts, feelings, and behaviours) that lead to high or low wellbeing. An examination of the structural relationship features is however methodologically easier than an examination of these relationship processes.

Study One (Chapter four) examines the structural features of friendship with the aim of better understanding the friendship processes that lead to high wellbeing, and Study Three (Chapter six) aims to simultaneously examine both friendship structure and process. Yet, the impact of a social interaction or relationship on wellbeing also varies based on the type of social relationship in questions and the expectation an individual may have on for this relationship. The next section will explore this in more depth.

2.3.2. Social Relationship Type, Homophilly and Wellbeing Impact

The relationship processes (and the structural features) conducive to high wellbeing vary between relationship types. For example, Brewer et al. (2015) found that the religious support received from a clergy or congregation member had a particular impact on wellbeing not comparable to other network types (Brewer et al., 2015). Moreover, the expectations we are likely to hold for our social relationships will be shaped by the classifications and labels that we assign to these relationships. For example, certain actions particularly those signifying intimacy may a sign of disrespect between colleagues but a sign of relationship strength between friends or lovers.

To understand the relationship between social networks and wellbeing, it is important to understand the norms and expectations associated with each type of social relationship. This thesis provides a unique contribution to the literature here by exploring the role of friendship specifically on wellbeing, and the norms and subjective interpretations of modern friendship among community-dwelling older

adults. Yet, this examination of friendship acknowledges the influence of an individual's wider social network on the importance of friendship for older adults. By comparing the impact of friendship on wellbeing to that of family and community ties, a better understanding of the dynamics of these unique social forms can be provided.

2.4.   Changing Social Connections

Social network change and the drivers behind it, are central themes throughout the thesis. We know that the social connections that individuals want and the social connections that individuals can gain and sustain are both subject to change across the life course. Specifically, literature has highlighted that as older adult's age their social networks are likely to become smaller (Cornwell, 2015; Shaw et al., 2007) and more centred around family and romantic relationships (Sander et al., 2017; Shaw et al., 2007; Wrzus et al., 2013). Yet, demographic trends suggest that modern family bonds and romantic relationships may be quite different for current generations than they have been historically (Carr and Utz, 2020). These trends could mean that this observed shrinking and familiarisation of social networks in later life may either no longer occur or may occur differently. Moreover, the cohorts currently in later life have witnessed important transformations in the availability of communication technologies and in the migration and relocation of peoples across the globe. These social changes are likely to have impacted the ways that these cohorts are able to connect and maintain connection with their social networks across their lives.

This thesis contributes to these debates by examining social network change for contemporary older adults, utilising longitudinal data to examine within person change in social networks across friendship, family, and community bonds (see chapter five). It is also able to examine social network change during the COVID-19 pandemic drawing greater depth of understanding around how older adults navigate social network change (see chapter six). This section (2.4) continues to summarise the research on social network change in later life and hypothesise

about how demographic and social trends may influence the social networks of current and future older adults.

2.4.1. Shrinking Social Networks

It is a widely cited assertion, in classic gerontological research, that older adults see their social networks reduce in size throughout later life (Cornwell, 2015; Shaw et al., 2007). Although, theorists disagree about whether this is an inevitable and normal part of the ageing process (disengagement theory) (Cumming and Henry, 1961) or a product of ageist institutions negatively judging the social contributions of older adults (activity theory of ageing) (Havighurst and Albrecht, 1953). The evidence, that older adult's social networks shrink in later life, can be found in cross-sectional studies exploring the link between age and social network size (Cornwell et al., 2008; Phongsavan et al., 2013; Smith et al., 2014), as well as longitudinal studies exploring within-individual social network change across time (English and Carstensen, 2014; Kalmijn, 2012; Shaw et al., 2007). Not only does this evidence support the assertion that an older person's social network reduces in size but also that the frequency of interaction with these ties reduces with age (Cornwell, 2011; McDonald and Mair, 2010; Phongsavan et al., 2013).

Despite these overall trends towards a reduction of social contact or a shrinking of one's social network, considerable variation between groups of individuals can be identified (Shaw et al., 2007). For example, individuals with a higher education level have been found to have larger personal networks (Ajrouch et al., 2005; Cornwell, 2015). Moreover, individuals with a lower socio-economic status were found to be less able to replace lost ties than other groups (Cornwell, 2015). Reductions in social networks size have also been found to be mediated by gender. Research has found that women tend to have larger social networks than men (Weiss et al., 2022), but that with this they experience a greater reduction in social network size in later life (Ajrouch et al., 2005). Moreover, despite men being found to generally receive and provide less support than women in later life, they have also been

found to be more satisfied than women with these support exchanges (Shaw et al., 2007).

2.4.2. Familiarisation of Social Networks

Other research has suggested that the global social network measures used in the studies outlined above, such as total network size, may hide considerable variation in social network change between types of relationship. Measuring social network change is made more difficult when individuals report experiencing simultaneous losses and gains between different social network types creating an artificial stability in their global social network measure (*ibid*). Name-eliciting surveys, in contrast, can over report social network churn as respondents simply forget to mention ties or keep social relationships dormant rather than losing them entirely (Fischer and Offer, 2020). It is important to note that, as the definitions of friend, neighbour or even family member are flexible and self-defined (see section 2.2), when facing considerable social network loss an older adult may adjust the inclusion criteria for their social network. Individual's previously classified as acquaintances become reclassified as friends even when the function or form of the relationship itself doesn't change. The use of a multi methods approach in this thesis is uniquely able to examine both change in quantitative social network measures and explore the interpretation of these through qualitative discussion.

Despite these methodological challenges, there is considerable evidence to suggest that social network change in later life varies considerably between different types of social network contact, such as friends, family, neighbours, and colleagues. For example, research by Cornwell found that despite age being negatively associated with global network size and closeness to network members, age was positively associated with frequency socialising with neighbours, religious participation and volunteering (Cornwell et al., 2008). Moreover, many studies have highlighted that certain 'core' contacts remain stable across time, when other more peripheral ties are lost. These 'core ties' are often found to be family-based connections, romantic partners, and/or very close friends, (Morgan et al., 1996; Shaw et al., 2007; Van

Tilburg, 1998). Peripheral ties are often identified as employment-based connections, distant friends and neighbours (Wrzus et al., 2013). See discussions on social convoy theory in section 2.5.1.

Similar findings have been published looking at the frequency of in-person contact within network relationships. Where the frequency of contact with family ties remains relatively stable, it is seen to decline following a cubic trajectory with nonfamily members such as neighbours, friends, and acquaintances (Sander et al., 2017). Research has found that with age, social networks become less diverse (Marsden, 1987; Smith et al., 2014), more geographically dispersed (Smith et al., 2014) and less multiplex (*ibid*). This is consistent with a loss of certain types of social relationship and the maintenance of others. These trends provide an explanation for the reductions in global network size highlighted in the previous section and justify the relationships specific approach to understanding social network change adopted in this thesis (Mollenhorst et al., 2014; Van Tilburg, 1998). This thesis explores the ways that older adults' categories their own friendship ties in the third research study.

In summary, the current body of research suggests that older adult's global social networks become smaller and more centred on familial or core ties as they age. These trends may, however, be shifting in response to wider demographic and socio-cultural trends. Arguably, families are become more complex and less consistently present in older adult later life social networks. With this, friendships may be of increasing importance for current and future generations (Baeriswyl and Oris, 2022; Fiori et al., 2020). Moreover, the relationships management processes across all relationship types are likely to have been influenced by the rise of remote communication technologies. The following subsection continues to outline these trends and debates in more depth.

2.4.3. Changing role of the family

Demographic trends have changed the nature of romantic and family networks in later life. Fewer adults are reaching later life with their first spouse. Greater numbers are experiencing divorce, re-marriage, opting into non-marital romantic partnerships, and/or choosing to remain single (Carr and Utz, 2020). This is demonstrated by the fact that the UK marriage rate was the lowest on record in 2018 (Office for National Statistics (ONS), 2018), and that the UK total fertility rate reached a record low in 2020 (Office for National Statistics (ONS), 2020). In 2023, 30% of households were occupied by single person (8.4 million), and this proportion has seen steady growth since 2013 (Office for National Statistics (ONS), 2021a). Ninety-three per cent of this growth has been attributed to the over 65s and more than half of these single occupancy household are headed by an individual over the age of 65 (*ibid*).

These trends do not necessarily suggest a decline in the importance of family ties in later life, but they are likely to be related to increasingly large proportions of older adults reaching later life without a current romantic partner, without adult children, living on their own, and/or with complex 'blended' family networks (Carr and Utz, 2020). These changes could signal a re-framing of late life family roles and support exchanges, and these could have knock on influences on the nature of later life friendships. The social networks of contemporary older adults have also been influenced by wider technological changes during their life courses.

2.4.4. Global and Digital Social Networks

Adults born in 1950 turned 70 the year the interviews in this thesis were conducted. This 70-year period has been marked by major advances in communication technologies. These have transformed our capabilities for long-distance communication enabling individuals to maintain social relationships across the globe. To put these technological changes into context, the year this cohort

turned 19, colour TV was first expanded across the three major UK TV channels, and it wasn't until this cohort turned 30 that the personal computing revolution started to take hold. Fast forward to the 1990s, as this cohort reach their 40s, the commercialization of the internet began to change the way that individuals were able to directly communicate with one another. Around 2007 when this cohort were nearing retirement, the arrival of the smart phone saw this connectivity begin to be integrated into everyday life. This cohort has, therefore, lived through both the pre and post digital eras and will have negotiated their early social relationships throughout these changes.

Not only have digital technologies influenced the way that individuals are able to interact with one another across large distances, but this period also bore witness to increases in international mobility. This is perhaps best demonstrated through reference to the growth of the aviation industry. The number of passengers passing through a UK airport increased 100-fold between 1950 and 2010 (Rutherford, 2011). The annual number of flights increased from below 200,000 in 1950 to more than 2 million in 2001 (*ibid*). Alongside a boom in the leisure and tourism industries, wider migration patterns can shed some additional light on these journeys. Between 1961 and 1981, when this cohort were in their early life, the UK experienced almost continuous net emigration of around 20'000 per year (Sturge, 2024). In contrast, after 1991 annual net migration increased. In recent years this has surged, reaching a peak of 764'000 in 2022 almost four times that in 2013 (*ibid*). Migration dislocates an individual from their place-based social networks, this can be a source of social network disruption for the migrating individual the networks they leave behind. More broadly, as the residents of a given community change, so to can the nature of the social interactions between residents in these communities. Themes of life-course migration and the use of digital communication tools are both prevalent in the third research study, see chapter 6.

One can easily hypothesise how these three social transformations (a demographic change in family network structures, a globalisation of social networks, and a digitisation of communication tools) may have impacted the friendship-based ties

of the older adults who lived through this period. For example, migration patterns and increasingly complex family structures may have reduced the availability of family ties and thus potentially increased the importance of non-familial or friendship-based ties. Moreover, digital communication tools may enable the maintenance of longer-term friendships perhaps reducing friendship churn. Later born cohorts of older adults have been found to have social networks with a greater proportion of friendships (Fiori et al., 2020; Huxhold, 2019; Suanet et al., 2013; Suanet and Huxhold, 2020; Wang and Wellman, 2010) and these friends have also been found to be more likely to fulfil functions traditionally associated with family ties (Suanet and Antonucci, 2016). This is perhaps best illustrated by the fact that research has found older adult's without children have larger friendship networks and are more likely to consider these friends to be supportive (Schnettler and Wöhler, 2016).

2.4.5.   Section Conclusion

Considering these wider social and demographic shifts it is important that the research on late life friendship is re-examined. This includes both an examination of whether social networks in general are shrinking, become more familiarised, more global and/or more digital, as well as an examination of the role of friendships within this. As we question the ways that older adult's social and friendship networks may be changing, we can also re-examine the large body of theoretical literature that previously provided explanation for these trends. The next section continues to summarise the theoretical approaches to understand social and friendship network change and the research on the drivers behind this.

2.5.   Drivers of Social Network Change

2.5.1.   Theoretical Background

Several social theories have provided explanations for the structures of later life social networks and the ways that they change/develop throughout the life course.

This thesis draws upon multiple theoretical models. A model of late life friendship outlined by Fiori, Windsor and Huxhold (2020) is used extensively. This expands on a model by Bliezsner, Ogletree and Adams (2019). Both of which integrate principals from several foundational earlier theories and apply these specifically to late life friendship. The focus on friendship in this thesis justifies the dominance of these more specific theoretical approaches, however, throughout the thesis results discussions are linked to not just these theoretical models but also the various prior theories that preceded them. For example, Social Convoy Theory (SCT), social-emotional selectivity theory (SST) and continuity theory (CT). This section continues to summarise some of these theories and the following sub-section (2.5.2) links these to the thesis topic in question.

2.5.1.1.   Social Convoy Model, Socio-emotional Selectivity Theory and Continuity Theory

SCT, asserts that an individual's social roles are the primary structures through which they form and maintain social relationships (Antonucci et al., 2013; Kahn and Antonucci, 1980). These networks can be visualised in three concentric circles or rings. Relationships in the outer ring are entirely dependent on the context of a social role, such as a workplace or a family gathering. Those in the middle ring may interact with the individual at times or in places outside the boundaries of their original role context but are not wholly independent from it. Lastly relationships in the core/inner ring are marked by the closeness of the two individuals and the support exchanged between them is entirely independent from the social role or context in which the relationship was first formed. A social convoy model tool is used as a discussion prompt in the third research study, inspired by this theoretical approach. As an individual's roles change across the life course (such as during retirement, bereavement, parenthood, or home relocation) their social convoys are modified accordingly. Relationships in the inner ring, because they have transcended the role context have a relational resilience during these transitions and across the life course.

Socio-emotional selectivity (SST) theory, in contrast, highlights the role of human behaviour and agency in the creation and maintenance of social relationships. Positing that human interaction is motivated by social goals and that the salience of these goals varies depending on an individual's stage of life (Carstensen et al., 2003, 1999). In adolescence, information acquisition goals are foremost and thus individuals desire large and diverse social networks. In adulthood, and later life emotion regulation goals are more greatly valued and thus lead to increased investment in a smaller number of close, primarily familial, relationships. Thus, the relationships with most relational resilience (those defined as core ties according to SCT) are those through which an individual has strong emotional attachment.

Continuity theory (CT) offers a third approach. Here, an emphasis is placed on the human preference for stability and away from change (Atchley, 1989). This allows for a recognition of how individuals may act to preserve their networks during a life course transition, rather than embrace change. It also opens the possibility that the networks with greatest relational resilience may not necessarily be those that one is closest to, but simply those that are the easiest to maintain. These individuals could be motivated to maintain these ties out of a desire for stability rather than due to the quality of the relationship itself. The following section continues to outline some of the common criticisms of these theoretical approaches.

2.5.1.2.   Critiques

All three theoretical models were developed primarily within Western, individualistic cultural contexts. In these environments, personal independence and self-selected support networks are emphasized. As a result, the theories place the individual or the 'ego' at the centre of their social relationships. This is quite literal in the case of SCT but in SST it is also an individual's motivations that are the driving force of social relationship changes. This individualistic approach may not be applicable across cultural contexts where social relationships are less individualistically determined, and/or collectivistic social obligations are stronger. The thesis research is based on British samples and so these critiques may not

question the results presented here, but they do question the wider applicability of these results to another cultural context.

The models are also all based on the transmission of social support and emotional 'closeness'. Some argue that these approaches over-simplify and mis-represent social relationships, as they do not provide sufficient space to explore relationship conflict or explain when long term relationships have a negative wellbeing impact. This is arguably also a criticism of the thesis results and is discussed further in section 7.4 on limitations.

These models were all developed before the widespread proliferation of digital communication technologies (see 2.4.4). They, therefore centre on face-to-face relationships and interactions. In a digital world these theories may be less applicable. This raises further questions, such as whether digital communication platform foster emotionally meaningful relationships, and whether people still loose the relationships associated with a certain social role if they remain in the digital setting even after leaving the physical setting. For example, upon retirement if people stay in a online chat group with their colleagues would they still lose that same role based social network described in social convoy theory? The role of digital communication methods in enabling/disabling friendship management is explored in the results in the third study and in the discussion chapter.

Taken together these approaches highlight that social network change is the product of an individual's opportunities to form and maintain social relationships from their social roles, a product of their individual and psychological motivations to do so and related to the ease of maintenance associated with each relationship in question. All three of these approaches highlight the role of life course transitions in shaping social networks across the life course. However, none of these approaches really explain the processes behind this social network management. There are gaps in understanding: the behaviours that contribute to relationship dissolution or maintenance, the skills and resources that could be needed to engage in these behaviours and the extent to which these

skills/resources are distributed evenly across groups of older adults. These theories do not, therefore, provide a conclusive framework with to understand the behavioural responses to an unexplained social event or shock like the COVID-19 Pandemic. The theoretical models proposed by Fiori, Windsor and Huxhold (2020) and Bliezsner, Ogletree and Adams (2019) instead provide a framework with which to understand the behavioural processes of friendship specific relationship management. This makes these theories more directly applicable to the thesis results, and they are therefore discussed at greater length. In the following sections.

2.5.1.3.   Friendship Management Theories

The framework outlined by Bliezsner, Ogletree and Adams (2019) makes clear that friendship networks are not static forms created once and only adapted at a life course transition. Instead, social relationships and the networks they are part of are continually negotiated and re-negotiated in a fluid and bi-directional manner, see Figure 2.2. In this approach the relational resilience of one's friendships not only lies in the structural form of the ties themselves (i.e., if they are attached to a relevant social role), or to the motivations of the individual to sustain them, but in interactive processes that see relationships continually wax and wane. This is a crucial contribution as it reminds researchers that social network research is an investigation of social behaviour and the motivations, capabilities, and opportunities behind this. This thesis is unique within the wider literature on social relationships in late life as it can both explore within-individual friendship change across time (Study Two), and during a key transitional moment (COVID-19). The exploration of friendship negotiation during COVID-19 (Study Three) provides a critical potential insight into the behaviours behind friendship network change. Awareness throughout is given to this understanding that friendship change is a multi-dimensional process rather than a unidirectional social form.

Figure 2.2: Friendship Phases: changes over time in internal structure and
          interactive processes.
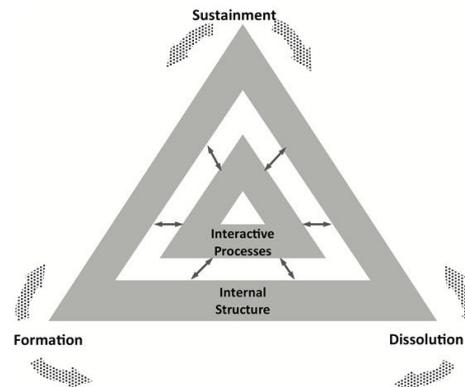
Source: Bleiszner, Ogletree and Adams (2019) Friendship in Later Life: A Research Agenda
Innovation in Aging, Volume 3, Issue 1, January 2019, https://doi.org/10.1093/geroni/igz005

In the theoretical approach outlined by Fiori, Windsor and Huxhold (2020), older adult's social ties are constructed on the back of an individual's investments (time and energy) into friendship forming and maintaining behaviours combined with the individual's 'social opportunity structure'. This is the possible ties that an individual could invest in, and the costs associated with these investments. The amount of time and energy that an individual will have to invest in their social relationships is directed by their individual capacities, and the people they choose to spend this time and energy on is directed by their motivations. The context that one lives in both informs their capacities and motivations but also the social opportunity structure available to them.

This approach draws on the previous theories outlined. It recognises the emotional energy needed to engage in change and the incentives to maintain existing social networks structures (continuity theory), it highlights the importance of one's wider social and environmental context in influencing the opportunities one has for creating and maintaining networks (social convoy theory) and it highlights the importance of individual motivations in directing the behaviours that ultimately create or sustain these relationships (socio-emotional selectivity theory). But it also

provides an explanatory model of the relationship sustaining behaviours that allows for a greater interpretation of the behavioural processes associated with relationships change. This model also recognises that relationship types are unique and therefore does not attempt to apply one theory to all social network contacts.

Figure 2.3: Conceptual model of context shaping investment into social ties through its effects on social opportunity structure, available time and energy, and individual characteristics.
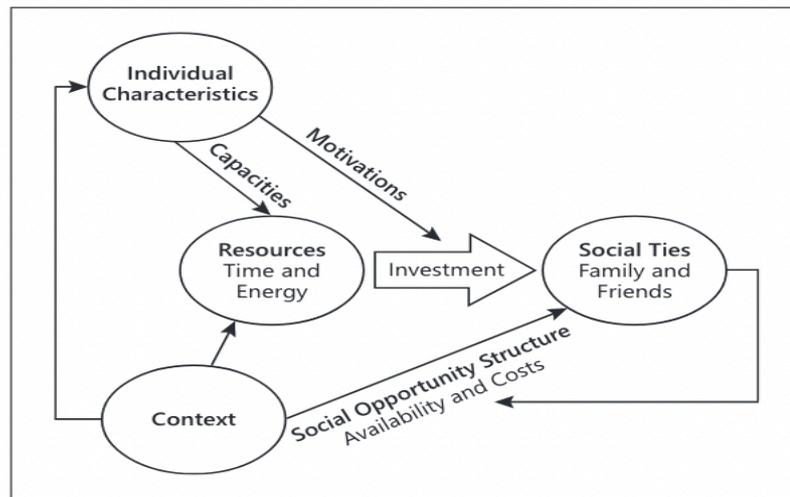
This rich legacy of social network theories provides an important framework for understanding the thesis results. These theories are all discussed in chapter seven, and the influence of each of these approaches is also evident in the thesis methodology and research design. The focus on subjective wellbeing throughout the thesis draws heavily on socio-emotional selectivity theory, and it's focus on the relationships most salient to an individual. The use of household composition as a tool to understand friendship network change (see chapter 4) draws inspiration from SCT, with household composition acting as a proxy for social role, and the third study adopts a social convoy model as a discussion prompt in the qualitative interviews (see chapter 6). All three studies take an approach to understanding friendship network change that recognises the fluid nature of relationship management and the distinct nature of friendship as a relationship category. The

following section continues to explain the specific factors that might enable or disable friendship network management, drawing on Fiori's theoretical model to do so.

2.5.2.   Drivers of Friendship Change

2.5.2.1.   Social Opportunity Structure

One's social opportunity structure is the list of available ties that they could invest in at any one time, and the costs associated with these investments. A hypothetical visualisation of this would be that at the beginning of each day, an individual had a bag of 'social tokens' to spend that day on social interaction. The people they could spend these on, and the price of each interaction would be determined by their social opportunity structure. There are many factors that might influence an older adult's social opportunity structure, some of which are outlined below.

One's neighbourhood environment has a key impact on the socialisation opportunities that any individual has. This includes access to 'third places' such as green space and leisure space as well as the availability of public transportation (Ray, Oldenburg, 1999). In later life, factors such as driving cessation (Pristavec, 2018) and decreasing physical mobility (Schmidt et al., 2019) may change the impact that one's physical environment has on their social opportunity structure. For individuals who lack the financial resources needed to access socialisation spaces or public transportation networks (Hickman, Paul, 2013) and/or those who are digitally excluded from remote communication technologies (Marston et al., 2019) the impact of one's physical environment may be felt even more acutely. Despite, technology use among older adults rapidly growing, according to recent estimates only 14% of individuals over the age of 65 use all four types of online communication platform (social media, messaging, video sharing and live streaming), contrasting with 89% of individuals aged 16-24 (Ofcom, 2022).

The wider demographic profile of a neighbourhood will influence the likelihood that an older adult will meet individuals from a similar socio/cultural background to themselves. For those who identify as belonging to a minority community this can be an important factor in their overall social opportunity structure (Ochieng, 2011). Moreover, as an older adult lives past national life expectancy, the chances that their age-based peers will have passed away increases and the resultant opportunities for social interaction with individuals of the same age decreases. Section 2.2.2 discusses the importance for individual wellbeing of holding social connections with individuals like oneself. Recognition of the importance of an individual's physical environment for their social integration opportunities and healthy ageing prospects more generally has underpinned a wide body of literature within the sub-field of environmental gerontology. This scholarly work has also contributed to policy movements for the adoption of 'age-friendly communities' (Centre for Ageing Better, 2023) '20 minute neighbourhoods' and '15 minute cities' (Sustrans, 2020).

2.5.2.2.   Capabilities

Although one's social opportunity structure will have a profound impact on their ability to form and sustain social ties in later life, the extent to which this is the case is also impacted by an individual's capabilities. To continue the prior analogy, where one's social opportunity structure is the opportunity to spend 'social tokens', one's capabilities are the number of social token's an individual begins their day with.

One's personality has an impact on their capability for social interaction (Rollings, Jasmine et al., 2023). There are also life course specific factors that may influence an individual's social capabilities. Despite social relationships reducing caregiver burden (Tough et al., 2022) informal caregivers often find they lack the time to be able to sustain social relationships (Cheng et al., 2013) and can feel socially excluded due to their caring role (Davies et al., 2019). Moreover, one's own health may both impact the energy that they have available for social interactions as well

as the energy needed to be able to do so. For example, a hearing impairment may increase the level of concentration needed to follow a conversation.

2.5.2.3.   Motivations

The final driver for social network change in Fiori, Windsor, and Huxhold's model (2020), is an individual's motivations. To extend the previous analogy, if one's social opportunity structure is the cost and availability of people they can socially interact with, and one's capabilities are amount of 'social tokens' they can spend on these interactions each day, then their motivation is the value that an individual places on these interactions. For example, one's perspective on how long they may have to live may impact the value they may place on their time and the decisions around who they want to invest their time and energy into. This is the key premise behind socio-emotional selectivity theory (Carstensen et al., 1999).

The value that an individual gains from a social encounter or specific social relationship is of critical importance. As section 2.2. outlined, there are many wellbeing benefits that an individual can gain from a social relationship. These operate through numerous mechanisms from the transmission of social support to identity construction. Research by (Fischer and Offer, 2020) found that the perceived balance of rewards in a relationship was the key determining factor behind the likelihood of an individual being dropped or retained from someone's network, where those who provided companionship, emergency help and advice were the most likely to be retained. The relative 'value' or 'reward' within social relationships and interactions can vary across time and around life course transitions.

Although this section has examined the social opportunity structure, capabilities and motivations that can impact one's social network in later life separately, these factors often operate simultaneously. For example, a large body of research has explored the impacts of retirement and widowhood on an older adult's opportunities to socialise with others as well as their capabilities and motivations to

do so. The COVID-19 pandemic can equally be seen to impact social network change, the following section summarises some of the research on the impact of the COVID-19 Pandemic on social relationships.

2.5.3.   COVID-19

It is easy to hypothesise how the lockdown policies introduced at the outbreak of the COVID-19 pandemic may have fundamentally altered the opportunities, motivations, and capabilities behind the social behaviours of individuals. The opportunities for interaction could have been impacted by the closure of public socialisation spaces, the restriction of access to residential housing, and fundamentally the deaths of many older adults. Motivations to interact with one another could be altered as the risk of catching or transmitting the virus is added to cost-benefit analyses. Lastly, one could argue that the reduction in face-to-face interaction could lead to a 'social deconditioning' in which individuals also find their capabilities for social interaction reduce. The third research study explores these questions in greater depth. This section continues to discuss the published research on the impact of the COVID-19 pandemic on social networks and behaviours.

Individuals of all ages reported a decrease in the frequency with which they saw their family and friends during the first year of the pandemic, 2020-2021, when compared with 2019-2020 (Office for National Statistics (ONS), 2022d). This lack of contact was found to have been accompanied by increases in loneliness, isolation, and decreased wellbeing. Studies by Kovacs et al. (2021)[2] and Krendl and Perry (2021)[3] utilise longitudinal data collected before the outbreak of the pandemic and in the first year of the pandemic to capture early changes in people's levels of isolation, loneliness, and wellbeing (Krendl and Perry, 2021). They find both a significant increase in rates of loneliness and depression as well as decreases in social network density and global network size. The presence of face-to-face

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[2] N=189, mean age 27.6, US based
[3] N=120, mean age 75 years old, US based

interactions, as well as the duration and frequency of interactions with very close ties, were associated with smaller increases in loneliness during this period (Kovacs et al., 2021).

Although these studies have relatively small and unrepresentative samples these findings are backed by research by O'Sullivan et al (2021) that contribute a transnational comparative study on the topic. With a sample of 20,398 respondents from across 101 countries (mean age = 53). This cross-sectional study compares the loneliness (UCLA Loneliness scale) and social Isolation (LSNS-6) scores of respondents collected from June to November (2020) with their own retrospective pre-pandemic scores. The researchers found that the prevalence of severe loneliness increased more than three times (from 6% retrospective pre-pandemic to 21%), and that 13 % reported a substantial increase in social isolation (O'Sullivan et al, 5:2021).

Not only is there evidence that people became more isolated and lonelier in the early pandemic period, but more recent research has suggested that these loneliness rates may have remained persistent throughout the subsequent recovery periods. Research has found that 1 in 6 of those experiencing a decline in their reported loneliness from Mar/Apr 2020 until Sept/Dec 2021 were still experiencing persistent COVID-19 induced loneliness (Kotwal et al., 2021) [4].

There is, therefore, early research to suggest that the COVID-19 pandemic induced less frequent face to face interaction and that this is associated with higher sustained rates of loneliness and isolation. However, these changes were not felt universally, and research has highlighted potential factors that might have either protected or increased the risk of individual's social networks changing and their loneliness and isolation increasing.

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[4] N=673, mean age 63, US based

ONS data suggests that both older and younger people may have experienced a greater reduction in the frequency with which they saw their family and friends than those of middle age. Moreover, within age groups considerable variation can be observed. Kulmala et al. (2021) identified five types of personal network change in individuals over the age of 80 in Finland. "In type 1, all social contacts were significantly reduced due to official recommendations and fear of the virus. Type 2 included modified ways of being socially active i.e., by deploying new technology, and in type 3, social contacts increased during the lockdown. In type 4, personal social networks were changed unexpectedly or dramatically due to a death of a spouse, for example. In type 5, we observed stable social networks, which had not been affected by the pandemic" (Kulmala et al., 2021). Data suggests that during the COVID-19 pandemic older adults both gave and received considerable support from their local communities. For example, according to ONS data at the height of the pandemic[5] "65.8% of people aged 65 to 74 years were checking on their neighbours who might need help, compared with 41.3% of those aged 16 to 24 years" (Office for National Statistics (ONS), 2022d). Similarly, 84.7% of those aged 75 and over believed that they would be supported by other local community members during the COVID-19 pandemic, compared with 58.1% of those aged 25 to 34 years" (Office for National Statistics (ONS), 2022d). This suggests that despite both older and young adults seeing their friends and family less than those in mid-life, older adults benefited from higher levels of community activity than younger adults.

A variety of factors have been found to be associated with social isolation and/or increased loneliness specifically during the COVID-19 period. These include, "worse sleep, less physical activity, alcohol consumption, dissatisfaction with videocalls, living alone not by choice, time alone, homemakers and carers" (O'Sullivan et al., 2021). Moreover, poor physical and mental health, and insufficient financial resources continued to be risk factors for increased social isolation (*ibid*). For example, "during the pandemic, living alone was associated with 61% higher

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[5] May to August 2020

loneliness among those who lived alone by choice but nearly seven times higher among those living alone not by choice" (O'Sullivan et al., 2021). Given the importance of face-to-face interaction for loneliness and wellbeing (Kovacs et al., 2021) it is perhaps not surprising that those who lived alone fared among the worst during a period in which people were not allowed outside their homes. The central role that one's household social networks (or housing composition) plays on their wider friendship networks is explored at greater length in the first thesis research study and adds a critical insight to this body of literature (see chapter four).

A question remains, however, about the extent to which digital communication technologies might have protected individuals from isolation and loneliness during the early pandemic, and the extent to which remote communication a successful replacement for face-to-face interaction. A systematic literature review of studies that have explored the impact of video calls for reducing loneliness and social isolation in older adults found no evidence of their efficacy (Noone et al., 2020). The third thesis research study rather than exploring the success of any protective factors explicitly asked people how they managed their social network changes and whether they chose to utilise digital communication technologies for this. This is a key contribution to the literature as regardless of the potential viability of digital communication methods to replace or facilitate social interaction, if they are not the solution of choice for older adults they will not be utilised.

2.5.4. Section Conclusion

The literature on the drivers on social network change is diverse, multidisciplinary, and extensive. Human behaviour is influenced by one's physical, psychological, and social environment and social network change can be understood to fundamentally be the product of behaviour based social interactions (see section 2.3). The model of friendship network change outlined by Fiori, K. Windsor, T. and Huxhold, O. (2020) provides a useful framework for understanding the drivers of social network change in later life. Various factors influence: the opportunities an individual has, to be able to engage in social behaviours; the individuals that are available to interact

with; an individual's capability to participate in social behaviour; and their motivations to do so. Life course events and transitions, such as widowhood and retirement can have a triggering impact on all these functions of social network change. The COVID-19 pandemic provides a unique opportunity to examine the relative importance of the drivers of social network change.

2.6.   Conclusion

This chapter begins with a summary of the literature on wellbeing change in later life and wellbeing change because of the COVID-19 Pandemic. As subjective wellbeing is the outcome of interest throughout the thesis it is important to provide this broader understanding of the dynamics of subjective wellbeing across the life course. The second section of the chapter continues to describe the wide body of literature on the impact of social relationships on the wellbeing of older adults, and the dynamics of these social relationships that are of wellbeing benefit. The third section explores the literature on the ways that social connections have been found to change in later life and the rationale for why wider socio-demographic trends may have altered these patterns. The fourth section provides a discussion of the drivers behind social network change, both the theories that explain social network change and the research that has highlighted the causal factors and conditions necessary for social network change. Taken together, this chapter aims to provide both a wider view of the impact of one's social networks on their wellbeing and the ways these change in later life, as well as a narrower perspective on the unique importance of friendship ties on late life wellbeing.

This thesis contributes to our understanding of the benefits of social relationships on wellbeing in several ways. Firstly, it explores the role of different relationship types (friendship, family, and community tie) on an older adult's subjective wellbeing, a critical contribution to a body of literature that has primarily adopted a 'whole network' approach to examining social relationships. It also examines the importance of one's household composition in influencing these associations, this is useful as most of the research to date has focussed on living alone and ignored

other household composition forms. The thesis is also able to link this understanding of friendship structures and wellbeing to the investigation of friendship processes and wellbeing in the third research study.

The thesis is also able to contribute to the literature on social network change in later life. The use of longitudinal methods in Study Two allows for an exploration of within-individual friendship network change, and this is complimented by the third thesis research study which examines change during a unique social event – the COVID-19 Pandemic. This provides a critical contribution to the understanding of the management processes that individual's employ to maintain or adapt their social relationships during an exogenous event.

Finally, the mixture of qualitative and quantitative methodologies employed throughout the thesis allows for a complex understanding of the dynamics of the behaviours, negotiations and thought processes behind friendship network change. Crucially, this may enable the design of interventions to support people to form and sustain resilient social networks thus reducing the chance of social relationship related low wellbeing in later life.

3. <u>Methods</u>

3.1.   Chapter Introduction

The primary aim of this thesis is to understand if and how late life friendship is important for individual wellbeing. To do so, this thesis presents three studies each capturing a different view of late life friendship using different methods. This approach is informed by Blieszner and Adams's conceptual definition of friendship structures, processes, and phases (Adams and Blieszner, 1994). The first thesis study focuses on late life friendship structures, the second on late life friendship phases and the third on late life friendship phases and processes. A mixture of primary and secondary data collection approaches and both qualitative and quantitative methods are used to do so.

More specifically, the first thesis study explores the association between older people's friendship networks and their life satisfaction, examining how these vary by household composition, and how these associations compare with those observed between family networks or community organisation activity and life satisfaction. This is achieved using cross-sectional binary logistic regression models with data from Understanding Society: The UK Household Longitudinal Survey. The second study explores multiple waves (3 and 9) of this same survey to examine the impact of a transition out of friendlessness on subjective wellbeing. Here fixed and random conditional logistic regression models are utilised, and a full sample is compared with an 'ageing in place' sample. See section 1.4.7 for a definition of ageing in place. The third study draws on primary data from 20 1:1 remote interviews conducted during the COVID-19 pandemic in 2020. This data is used to explore how older adults understand and manage their friendship networks during this unique period.

Each research study adopts a methodological approach appropriate for the corresponding study aims. Section 3.3 will address the methodological design for the first research study (results presented in chapter four) and sections 3.4 and 3.5

will do the same for study two and three respectively (the results for these chapters are presented in chapters five and six). Prior to this, however, it is important to set out the overall thesis research design, the following section (3.2) will address this. Within this, the first subsection outlines the method selection and links these to the thesis research aims, the second subsection explores the strengths and weakness of each method adopted and the last subsection provides a justification for the use of multiple methods appealing to a critical realist epistemology and ontology.

3.2.   Thesis Research Design

3.2.1. Rationale for Method Selection

Blieszner and Adam's work on understanding friendship draws attention to its complex and multifaceted nature (*ibid*). Friendship is not only a 'thing' (noun) with 'structures' that can be observed, but also a 'process' (verb) with actions that evolve from emotions and motivations. One can both have a friend and be a friend. This research also highlights that as friendship is not static but a changing form. Late life friendship, therefore, cannot be fully understood without observation of the 'phases' of friendship change across time. The thesis has been designed to observe all three of these aspects of friendship.

The first thesis study explores six aspects of **friendship structure**, the presence of a close friendship network, the size of this close friendship network, the frequency of online interaction with this close friendship network, the similarity of an individual to their close friends in terms of education, ethnicity and income, the geographic proximity of an older adult's close friends, and lastly how many of their close friends are also family members (multiplexity). Friendship structures are more easily quantified than friendship processes (*ibid*), and variables denoting friendship structure are readily available in large nationally representative surveys such as Understanding Society. This makes the secondary data analysis of a nationally representative survey the obvious methodological choice for the examination of

friendship structures. This is, therefore, the method selected for the first thesis study.

To capture **friendship phases** and friendship change, the second thesis study explores the association between transitions out of friendlessness on transitions from low to high wellbeing across a six-year observation period. By leveraging the longitudinal panel data in Understanding Society, actual rather than retrospective change can be seen (Twisk, 2013), and fixed effects models can be fitted to capture within individual change across time (*ibid*). This makes longitudinal panel data a powerful choice for analysing change. Adopting the same survey in study one and two allows for greater comparability of results aiding both interpretation of the studies in isolation and the generation of some thesis wide conclusions.

The third thesis study explores the **friendship processes** that sit behind these late life friendship structures and phases. An examination of friendship behaviours and the thoughts and feelings that surround these are best captured using qualitative methodologies (Miles et al., 2014). Semi-structured interview approaches allow participants the space to provide discussion and clarification to the topics analysed in study one and two with pre-determined closed questions (*ibid*). In this research each participant is given a questionnaire with the same demographic questions as those analysed in the first two studies. This again improves the comparability and interpretation of the results thesis wide.

The existing literature not only inspired differences in focus between the three thesis studies but also similarities in methodological approach across the studies. Notably, the wider literature on late life friendships motivated attempts to understand late life friendships within the context of the social networks they are situated and the neighbourhood geographies in which they reside (see section 2.3). However, complications with sample sizes and data collection methods due to the outbreak of the COVID-19 Pandemic limited the extent to which these thesis wide points of integration were realised. This section will continue to discuss this further.

This thesis specific set out to explore friendships rather than whole social networks due to the hypothesis that demographic trends could have specifically impacted late life friendship forms (see section 1.2). However, the wider body of literature has primarily adopted a whole network approach to understanding social relationships. This is either done with the use of composite scales such as the Lubben Social Network Scale (Lubben, 1988), or through a typological approach such as that pioneered by Claire Wenger (Wenger, 1991). This is partially due to a recognition that social relationships are highly contingent on one another and have dynamic network effects. As a result, all three thesis studies are designed to both observe friendship in isolation and to situate it within wider social networks.

In Study One, differences in friendship structures are observed between household composition sub-samples (residential social networks) and the relationship between friendship structures and wellbeing is compared with that observed for non-residential family networks and wellbeing as well as community organisational participation and wellbeing. Study Two and three, also draw comparisons between friendship networks, family networks and community group participation. Study two examines transitions out of a state of community group inactivity and gaining a family network. The third study asks participants to describe all their relationships, with friendships being identified in post-interview analysis and compared with a wide range of social relationship types.

The second and third studies were initially designed to, like the first study, also compare friendships across household compositions. Unfortunately, small sample sizes prevented this sub-sample analysis in study two. Moreover, an announcement of a COVID-19 'lock down' during the recruitment phase of study three reduced the researcher's ability to recruit to all four of the household compositions included in the first study. As a result, the relationship between friendship networks and wellbeing is not compared across household composition in studies two and three. The unexpected outbreak of the COVID-19 Pandemic also changed much of the substantive focus of the third research study, impacting the extent to which the results of this third study can be compared with the previous two.

Research has demonstrated that differences can be seen in the processes of friendship formation and maintenance amongst older adults living in age-specific communal housing (Bernard et al., 2012; Evans, 2009). Across all three studies sample selection decisions were mindful of these effects. Thesis wide, research samples do not include those in age-specific housing, such as nursing, or care homes. Moreover, research has found that home relocations, whether into age-specific housing or within regular communities, are often marked by changes to one's social network. This can mean a separation from local ties. Research has also found that people often move to be near support systems and are less likely to move if they have good localised social networks (Gillespie and Fokkema, 2023). Therefore, these transitions may also involve more frequent interaction with pre-existing social contacts. As studies two and three explore change across time, both studies control for the effects of residential relocation. Study Two, presents both the association between friendship change and wellbeing for the full sample and for sample that excludes individuals who have relocated neighbourhoods (Lower Super Output Areas) between the two observation points. Study Three excludes individuals who have relocated home less than 10 years prior to interview. The selection of a case study approach to the third thesis study also allows for further discussion of the role of neighbourhood features on late life friendship. Practical considerations, given the need to recruit for this study shortly before a national COVID-19 lockdown, impacted the selection of this case study location. Barton-on-sea is a relatively unique neighbourhood type, arguably limiting the extent to which the findings from this study can be generalised more widely.

Substantive interest in observing friendship structures, processes, and phases and doing so within the context of wider social networks and neighbourhoods shaped many of the methodological decisions across the thesis. In some cases, unforeseen circumstances such as the COVID-19 Pandemic have curbed the researcher's ability to execute these methods. All methodological decisions throughout the thesis are taken with an understanding of the philosophical and empirical strengths and

weaknesses of each method. The following section justifies the thesis approach on methodological rather than substantive grounds.

3.2.2. Methodological Strengths and Weaknesses

The thesis has been designed so that the methods selected are not only relevant for the specific aims of this study (see section 3.2.1) but also so that the limitations of each method/data source is a key strength of the other. This allows for the formation of a more balanced overall picture of late life friendship. The strengths and weaknesses of each study are summarised below and presented in table 3.1 on page 87.

Study One and Two benefit from the use of nationally representative data making the conclusions more easily translated to a wide variety of groups. In contrast, the findings in study three are limited to one small and relatively unique case study location, and the sample is not nationally representative in terms of ethnicity, health, tenure, income, or household composition.

The use of large datasets also allows for the investigation of minority sub-groups. In this case it allowed for the investigation of relatively specific household composition groups. Study two, however, was unable to conduct sub-sample analysis at this level due to the sample size limitations of longitudinal analysis. Moreover, the analysis in study three was restricted to the two most populous household composition groups (living alone and living with a partner) due to the challenges of recruiting minority groups.

The use of primary data collection methods in the third study, however, gave the researcher greater scientific control over the recruitment and data collection processes. This meant that research questions and approaches could be quickly adapted to respond to changing circumstances with the outbreak of the COVID-19

pandemic. Understanding Society did include COVID-19 questions, but these were released more slowly and could not be included in the analysis in study one or two.

Semi-structured interview approaches also allow participants the space to provide discussion and clarification to the topics analysed in study one and two with pre-determined closed questions (Miles et al., 2014). For example, in study one and two when a participant is asked for the number of close friends they have, the only recorded data is the total number. Whereas in study three the interviews capture the varying factors that may have gone into determining if an individual is a friend or not as the participant verbalises their decision-making processes when counting their number of close friends. When researching relationships this is a particularly rich data source as meanings can be very subjectively determined.

The use of multiple methodological approaches also allows for the investigation of friendship change both retrospectively (in study three) and longitudinally (study two). This goes someway to addressing concerns around recall bias in retrospective research (Loftus and Marburger, 1983; Marin and Lin, 2020). It also avoids the use of longitudinal qualitative research, which has been found to have its own challenges as the establishment of long-term relationships with participants can be resource intensive (Calman et al., 2013). Longitudinal data analysis also allows for the estimation of causal effects by fitting fixed effects models that observe within individual change and control for unobserved between individual differences (Allison, Paul, 2009). This is a key strength of these methods and balances the weaknesses of cross-sectional research where the presence and/or direction of causality cannot be estimated.

The strengths and weaknesses of these different methodological approaches oppose one another across the thesis. This use of multiple methodological approaches can, however, hinder one's ability to draw thesis wide conclusions. To address this, key variables used in both study one and two are replicated in study three. Each participant, in study three, is given a questionnaire with the same demographic questions as those analysed in the first two studies (age, gender,

tenure, marital status, employment, education, nationality, Self-reported health, life satisfaction, presence of a long-standing illness or disease). This allows the samples to be compared and ensures that the findings in the third study can be more easily held up against those in study one and two. This strengthens the interpretation of each study in isolation and allows for the generation of some tentative thesis-wide discussions (see section 7.2).   The synthesis of the quantitative and qualitative approaches to friendship analysis also gives this thesis unique value and strength within the wider academic literature. Social network change has been primarily measured quantitatively, or through the adoption of a single method approach (Vos et al., 2020).

Table 3.1: Research Stages, Strength and Weaknesses

	Study One	Study Two	Study Three
Study Title	A Cross-sectional Exploration of the Relationship between an Older Adult's Friendship Network and their Life satisfaction.	A Longitudinal Exploration of transitions out of Friendlessness and Subjective Wellbeing Change.	A Qualitative Exploration of Friendship Network Maintenance/Change of Older Adults during the Second COVID-19 National Lock-down.
Research Questions	1) How is the presence and size of an older adult's friendship network associated with their life satisfaction? 1a) How does the relationship between the presence and size of one's friendship network and their life satisfaction differ from the relationship between their familial/community group activity and their life satisfaction? 1b) How does the relationship between the presence and size of one's friendship network and their life satisfaction vary based on their household composition? 2) How do the friendship networks of individuals in different household compositions vary in nature (the proximity of the friends, the similarity of the friends to the ego in terms of age, ethnic group, education, and income, multiplexity of the friendship network and frequency of interacting online)?	1) What proportion of older adults in this sample report transitioning from not having friends to having friends across a six-year observation period? 1a) How does observed friendship network change compare to family and or community social network change? 2) Are transitions out of friendlessness associated with a change in life satisfaction across a six-year time-period?	1) How did the participants describe their friendship networks? 1a) How did the participants describe these friendships in the context of their wider social networks? 1b) How did the participants describe the impact that these friendships had on their wellbeing? 2) Did the participants describe experiencing any retrospective changes to their friendships because of the COVID-19 restrictions or otherwise? 2a) If not, why not? 2b) If so, was this associated with a change in their wellbeing?
Data Source			
Approach	Secondary data collection from Understanding Society UKHLS, household panel survey data. Sample of individuals over the age of 60 in wave 9.	Secondary data collection from Understanding Society UKHLS, household panel survey data Two waves (3 and 9) are utilised. Sample of individuals over the age of 60 in wave 3 and 9.	Primary data collection from qualitative interviews, questionnaires, and visual data. Sample of individuals over the age of 60 who have aged in place in one case study neighbourhood.
Data Collection Strengths	* The use of nationally representative survey data means that findings can be generalised across multiple contexts and are therefore of relevance to a broad range of policy makers and practitioners. * Large data sets allow of the analysis of small subgroups of individuals such as those in a variety of household compositions.	* Longitudinal data allows for the investigation of actual rather than retrospective change across longer time periods than that possible within the PhD data collection period.	* Primary data collection methods allowed the researcher to respond to the unique research circumstances of the COVID-19 Pandemic to capture time-sensitive data quickly.
Data Collection Limitations	* Data is collected pre-pandemic and therefore cannot capture experiences during the COVID-19 pandemic.	* Observation points are pre-determined at waves 3, 6 and 9. A datasets with more regular observation points could possibly capture more transitions into or out of friendlessness. * Data is collected pre-pandemic and therefore cannot capture experiences during the COVID-19 pandemic.	* Findings are not generalizable beyond the case study location * Findings are not generalizable to a 'non-covid' time point
Data Collection and Analysis			
Approach	* Cross-sectional binary logistic regression models on four household sub-samples.	* Conditional fixed-effects longitudinal models on two samples: a full sample and one with controls for those who relocate home within the observation period. * Conditional random-effects longitudinal models on two samples: a full sample and one with controls for those who relocate neighbourhood.	* Thematic analysis of 20 1:1 semi-structured interviews. Discussions are stimulated by the completion of a convoy model exercise. Survey questions from study one and two are completed by participants to aide comparative analysis.
Data Analysis Strengths	* Household sub-samples allow for the exploration of variations in friendship networks between household composition groups.	* Conditional models allow for the investigation of within-individual change, enabling better control of omitted variable bias and estimating causality.	* Qualitative methodologies allow for the interpretation of the thoughts, feelings and behaviours (processes) behind friendship structures and phases.
Data Analysis Limitations	* Cross-sectional models cannot estimate causal effect	* Only explores transition out of friendlessness, cannot explore more nuanced friendship network changes such as to the quality or quantity of ties.	* Cannot explore differences across household composition groups, or other demographic groupings due to small and demographically homogenous sample. * Change captured is retrospective and thus subject to recall bias

3.2.3. Critical Realist Methodology

Multi-method approaches are often criticised on the grounds that quantitative and qualitative methodologies are ontologically and epistemologically incompatible (Creswell and Plano Clark, 2018; Tashakkori and Teddlie, 2003). That is, they are fundamentally grounded in different theoretical understandings of how the world is organised and therefore how it can be observed and/or measured robustly. However, in the last 20 years, there has been an explosion in the popularity of mixed and multi-method approaches and they are now seen as part of an established 'third option', with their own research orientations and practices (Creswell and Plano Clark, 2018). There are many practical reasons why multi methodologies offer a sensible approach for social research in general, and many more that justify their use within this thesis specifically. These have been outlined at length, however it is also important to vindicate the philosophical rationale underpinning the use of a multi-methods approach throughout this thesis. Side-lining the philosophical basis to social research is not only arguably inadvisable, it is also impossible (Cruickshank, 2002).

Research cannot be conducted without the implicit adoption of a philosophical position on the existence of the objective world, the ability to generate knowledge on it, and the tools selected to do so (*ibid*). This thesis, and the adoption of a multi-method approach within it, is grounded upon a critical realist philosophy. This is based on an understanding that different methodologies provide different lenses with which to see (contextually situated) views of one connected social reality. Critical realism is a term often used to describe a group of research principles including a belief in ontological realism, epistemic relativism, and methodological pluralism. Unlike the constructivist belief in either a "constructed reality, multiple constructed realities or a non-existent reality" (Bergman, 2011), critical realists argue that there is an external reality that exists independently from our investigation of it, this is termed ontological realism. However, critical realists also recognise that despite the existence of an independent reality, the epistemology of

researchers, (the knowledge that they gain of this reality) is historically, socially, and culturally situated. This separation of ontology and epistemology suggests an understanding that the different types of knowledge created by different methods are equally able to generate an observation of reality, and thus equally justifiable. However, each approach produces a lens on a different aspect of social reality, underpinning the necessity for methodological pluralism.

It is important to distinguish this use of multiple methods from the positivist use of 'triangulation'. The methods are not confirming the validity of a social phenomenon through the replicability of the results under different methods. The different methods will view a reality contingent to that timepoint and that method, however, through each method a researcher can observe a different level or aspect of the one social reality. Therefore, an incompatibility between results captured with different methods will not, necessarily be interpreted as evidence of a lack of reliability or each of those findings. Moreover, although the method behind each study informs the others, the findings are not blended to form a true mixed methods study. They are instead analysed separately-together, to reflect this recognition that each finding is inextricably linked to the methods through which it was captured.

This means that data used and collected in each of the results chapters each only offers one viewpoint of the social reality that is later life friendship. A viewpoint that is specific to the moment in time, geography, and individual characteristics of the respective participants, but also reflective of the methods used to capture that viewpoint. The knowledge gained from each of these 'snapshots' and the conclusions in this thesis are inherently contingent on the 'camera' used to view them. The questions asked, the intonation of the individual asking them, and the ways that these data sources have been processed, analysed, and understood by the author will (among many other factors) all impact the nature of this understanding. Crucially they also all add to an understanding of friendship in later life in general, making these different viewpoints all valuable assets in the attempt

to understand the true social reality of the relationship between friendship and wellbeing in later life.

3.3.   Study One Methods: A Cross-sectional Exploration of the Relationship between an Older Adult's Friendship Network and their Life satisfaction

3.3.1.   Introduction and Research Aims

The first study (chapter four) aims to explore the cross-sectional association between older adult's (60+) friendship networks and their subjective wellbeing (life satisfaction), and to understand how these vary based on household composition. This is achieved with binary logistic regression analyses of U-Soc (wave 9). The research questions are as follows:

1) How is the presence and size of an older adult's friendship network associated with their life satisfaction?

1a) How does the relationship between the presence and size of one's friendship network and their life satisfaction differ from the relationship between their familial/community group activity and their life satisfaction?

1b) How does the relationship between the presence and size of one's friendship network and their life satisfaction vary based on their household composition?

2) How do the friendship networks of individuals in different household compositions vary in nature (the proximity of the friends, the similarity of the friends to the ego in terms of age, ethnic group, education, and income, multiplexity of the friendship network and frequency of interacting online)?

This section will outline the details of the data used, the sample analysed, and variables used. It will conclude with a discussion of the ethical implications of data storage and management.

3.3.2.   Data and Sample

Understanding Society: The UK Household Longitudinal Study (U-Soc) is a household panel survey, with a sample of approximately 40,000 households nationwide. This is constituted of a general survey sample of 26,000 households, an ethnic minority boost sample (4,000 households), an immigrant and ethnic minority boost sample (2,500 households) and the remaining 8,000 households in the British Household Panel Survey (BHPS) (Knies, 2016). The general population sample in U-Soc is stratified, clustered and representative of the different geographical regions and social classes across the UK as of 2009 (*ibid*). The sampling for Northern Ireland uses a slightly different un-clustered systematic simple random sample approach (*ibid*). Therefore, the Northern Irish Sample has a slightly larger selection probability and has been weighted accordingly (*ibid*).

U-Soc is comprised of several survey elements: a main interview for adults over the age of 16; a self-completion questionnaire (paper in waves 1 and 2, computer-administered self-interview (CASI) from wave 3 onwards); youth questionnaires and proxy-questionnaires for those not able to answer by themselves. Incentives of £10 per adult and £5 for 10-15-year-olds are administered to encourage participation. Life satisfaction (the dependent variable in this study) is collected within the self-completion portion of the survey. The independent variables collected in various modules of the main adult interview. There are methodological differences between self-completion and interviewer responses that can lead to data inconsistencies (Bowling, 2005). Participants in face-to-face interviews are not required to have reading skills, an interviewer can clarify responses and interviewers help to maintain motivation with long questionnaires (*ibid*). Whereas self-completion questionnaires generate a greater sense of privacy and anonymity potentially evoking different responses (*ibid*). The Understanding Society survey

modules 'indall', 'indresp', 'xwave' and 'hhresp' were used to create a data set with the appropriate variables. Seventeen thousand five hundred and twenty respondents were excluded from the analytical sample as they had not completed all four survey modules. Individuals that do not complete a survey in its entirety often share certain characteristics leading to non-response bias. This is a limitation of the selected methodology (see figure 3.1).

Figure 3.1: Study One Analytical Sample Flow Chart
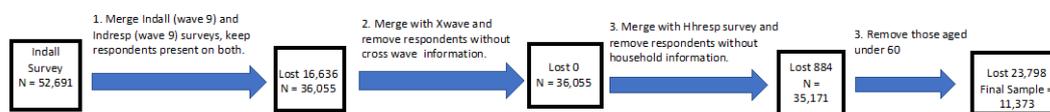
U-Soc was selected for several reasons. Unlike other longitudinal studies with sufficiently large samples of older people, such as ELSA (English Longitudinal Study of Ageing), U-Soc holds data on individuals across the UK, broadening the scope of the investigation. Moreover, the household sampling approach allows for the investigation of household structure and composition, a key factor of interest for this study. This allows for the examination of the different relationships between older adult's friendship networks and their wellbeing based on their residential social networks/household composition.

3.3.3. Analysis

The study adopts a binary logistic regression modelling approach to understand the cross-sectional relationship between older adult's friendship networks and their life satisfaction. Firstly, the presence and/or number of friends they have is modelled against wellbeing. These models are repeated for the whole sample and for four sub-samples denoted by the household composition of the individuals: those who live alone, those who live with a partner, those who live with a partner and others and those who live with just others. This allows for an understanding of both the

role of having a friend and the number of friends an individual may have on their life satisfaction, by household composition. The second stage of analysis explores the nature of an individual's friendship network, and this analysis is conditional on the respondents having reported having at least one close friend in a survey filter question. The association of variables capturing the size, frequency of online interaction, proximity, multiplexity and homophily of an individual's friendship network on their life satisfaction is explored using bivariate methods. Again, this analysis is replicated for each sub-sample, as denoted by the individuals' membership in one of four household composition groups.

Throughout analysis, control variables are included in models sequentially to assess the impact each variable had on the model. All control variables are selected based on theoretical grounds and are included regardless of significance or model impact. The control variables used are as follows: age, sex, education, tenure, nationality, employment status, self-reported health, presence of an illness or disability, size of family network and size of community social network. This section will continue to outline the rationale behind the selection of each variable and the analysis approach. For more information about the manipulation of these variables and the samples please see Appendix A and B.

3.3.3.1.   Life satisfaction

Life satisfaction is the standard measure of evaluative wellbeing across academia. The rationale for adopting an evaluative measure of subjective wellbeing is provided in section 1.4.4. The use of life satisfaction in major national surveys is one example of the acceptance and adoption of the measure. Life Satisfaction is one of four subjective wellbeing measures used by the Office for National Statistics in their Annual Population Survey (Office for National Statistics (ONS), 2022e). This sits alongside measures of happiness and anxiety (hedonic wellbeing measures) and how worthwhile an individual feels their life is (eudemonic wellbeing measure). Life Satisfaction is also used as one of 11 dimensions of wellbeing in the OECD's How's Life bi-annual wellbeing report (OECD, 2020). In contrast, life satisfaction questions

do not frequently feature in more psychological measures of wellbeing such as the Warwick-Edinburgh Mental Wellbeing Scale (University of Warwick, 2021) and the General Health Questionnaire which is often used to screen for psychiatric disorders. As the focus of this study is on wellbeing as a measure of how 'good' one evaluates their life to be rather than psychological distress, life satisfaction is selected as the most appropriate wellbeing measure.

The Satisfaction with Life Scale (SWLS), is the gold standard life satisfaction measure (Diener et al., 1985). This is a 5-item scale with a 7 category Likert scale. The questions in this scale are as follows: 'In most ways my life is close to my ideal, the conditions of my life are excellent, I am satisfied with my life, so far I have gotten the important things I want in life, and if I could live my life over, I would change almost nothing. The SWLS is not included in U-Soc, and this study instead adopts use of a single item measure of life satisfaction. The question in this is as follows: "Please choose the number which you feel best describes how dissatisfied or satisfied you are with the following aspects of your current situation. Your life overall". Future research should see if the results in this thesis are consistent across both measures of life satisfaction.

In U-Soc, respondents are given a choice of seven response categories from completely dissatisfied to completely satisfied, with which to capture their life satisfaction. This is fewer than the 10 category ONS wellbeing measure but more than the 5 category SWLS. This seven-item life satisfaction variable is re-coded for use in this thesis into a binary variable – low or high life satisfaction. This is done to simplify analysis, and because initial exploratory analysis with seven and five category versions highlighted a polarisation in the effect between those at either ends of this life satisfaction scale. The middle category of 'neither satisfied nor dissatisfied' is coded as 'low satisfaction' rather than 'high satisfaction'. There are several reasons for this, firstly, the variable with this formulation had a distribution more like that presented in the GHQ-12, secondly, over half of people who report being neither satisfied nor dissatisfied (n=858) have 2-5 friends (57% N=471). The results of life satisfaction and friendship network size cross-tabulations change

minimally when the middle life satisfaction category is coded as either high or low satisfaction or removed from analysis (table 3.2).

Table 3.2: Cross-tabulations of Friendship Network Size and Life satisfaction, with different categorisations for the binary cut-off (Wave 9)

N (Column percentage)	Life satisfaction binary – middle category included as high satisfaction N (%)		Life satisfaction binary – middle category excluded N (%)		Life satisfaction binary – middle category included as low satisfaction Variable selected for analysis N (%)	
Friendship Network Size	High life satisfaction	Low life satisfaction	High life satisfaction	Low life satisfaction	High life satisfaction	Low life satisfaction
No close friends	467 (5)	134 (11)	390 (5)	134 (11)	390 (5)	211 (10)
1 close friend	465 (5)	72 (6)	412 (5)	72 (6)	412 (5)	125 (6)
2-5 close friends	4,500 (50)	656 (53)	4,029 (49)	656 (53)	4,029 (49)	1,127 (55)
6 -10 close friends	2,686 (27)	287 (23)	2,511 (30)	287 (23)	2,511 (30)	462 (22)
11 or more close friends	953 (11)	96 (8)	906 (11)	96 (8)	906 (11)	143 (7)
Total	9,071 (100)	1,245 (100)	8,248 (100)	1,245 (100)	8,248 (100)	2,068 (100)

Source: Author's analysis of data from Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

3.3.3.2.   Friendship Networks

This thesis is concerned with ego-centred friendship networks (see section 1.3.1 for definitions). Here, an 'ego' is an individual over the age of 60 (at the time in which the data was collected) living in the United Kingdom. Friendships are self-defined by the survey respondents. Several variables are used to capture friendship network features. These include the presence and number of close friends the respondent has, the proportion of a respondent's close friends who live locally, the proportion who are also family (multiplexity), the proportion perceived to be like the respondent (homophily) and lastly the frequency with which a respondent interacts with their friendship network online. Several measures of homophily are used, including how similar an older adult perceives their friends to be to them in terms of ethnic group, income, education, and age. The term 'ethnic group' is left open to interpretation by respondents, with no specified ethnic groups provided in the wording of the question.

The measures adopted aim to capture as complex a picture of an individual's friendships networks as possible with the data available in U-Soc. These are reflective of some of the social network attributes frequently explored in existing scholarly work. Fuller-Iglesias (2015) among others provide an investigation of social network size and wellbeing. Pinquart and Sorensen (2000) explore social network quality, Lin et al (1985) explore social network homophily and work by Stoller and Longino (2001) and Zhang et al. (2012) explores the role of geographic proximity. Reliable measures of frequency of interaction and subjective value of these relationships are unfortunately not measured in U-Soc and thus not analysed, despite research highlighting their importance (Phongsavan et al., 2013). This is a considerable limitation of the research.

Comparisons cannot be drawn between the social network measures adopted and other widely used measures of social isolation or loneliness, such as the Lubben Social Network Scale, the Duke Social Support Index, the De-Jong Geirveld Loneliness Scale or the UCLA Loneliness Scale, due to their lack of inclusion in U-Soc. Future research should explore the research questions in this thesis comparing them with these established measures to see how the results differ. The third research study which uses qualitative methods, can present a more detailed and nuanced picture of later life friendship (see chapter six).

3.3.3.3.   Household Composition

Four household composition categories are used to conduct sub-sample analyses on the relationship between older adults' friendship networks and their life satisfaction. These categories both provide an indication of one's residential social network and can be understood as a proxy for life stage (see section 1.4.6). A four-category approach to the measurement of household composition is used for several reasons. Firstly, it is of conceptual and policy interest to be able to investigate individuals living in single occupancy households in later life. The number of single occupancy households has risen in the UK by 16% to 7.7 million between 1997 and 2017 (Office for National Statistics (ONS), 2019a). This trend is mirrored across Europe (Eurofound, 2019), and has been largely driven by single-

occupancy households headed by an older adult (Office for National Statistics (ONS), 2019a). Existing research has also found that individuals living alone may be at particular risk of poor health (Eurofound, 2019). Moreover, despite the substantial theoretical and empirical arguments that social isolation and living alone should be treated as distinct concepts (Smith and Victor, 2019) many studies include solo-occupancy as a measure of social isolation (Shankar et al., 2015). Therefore, being able to compare the role of one type of social relationship (a friendship) between those who live alone and those who do not, constitutes a substantial research contribution.

Although a simple comparison of those within and not within single-occupancy households would have been sufficient to do address the above, this thesis is able to gain a deeper understanding of the extent to which older adult's residential social networks more broadly may mediate the impact an older adult's friendships on their wellbeing. Those who live with just a partner, those who live with a partner and others and those who live with just others are categorised into three separate household composition groups, and each examined in turn. This approach is adopted due to a recognition that spousal/romantic social ties have a unique quality distinct from other residential social contacts, and because the presence of a romantic partner in a household is a key indicator of bereavement (a major triggering life event and indicator of life stage). It is, therefore, of conceptual interest to explore those living with a partner or not. This analysis does not however account for either non-married partners, or partners living apart together, a key limitation.

To maintain sufficiently large cell counts for analysis, finer household composition categories are not used. This means that this analysis is not able to distinguish adult children, from grandchildren, or other non-familial residential social contacts, this is a limitation of the research. Appendix A provides further examination of these individuals denoted as 'others'.

3.3.3.4.   Community Group Activity and Familial Social Networks

Alongside residential social network contacts (examined through household composition) and friendship-based ties, this study also examines membership in community activity groups and familial social network size. Membership in community activity groups is theorised to be able to capture an element of an individual's social engagement with more 'weak' or 'peripheral' social ties beyond their reported close friendships (Granovetter, 1973). Moreover, there is evidence to suggest that participation in group activities based on common interests or leisure pursuits may be associated with wellbeing independently from the creation of close friends through these groups (Fancourt and Steptoe, 2018a, 2018b). The number of organisations an individual reported being regularly active in is used as a proxy for this general community social engagement. Participants can choose from the following potential organisation types: political party, trade union, environmental group, parents' association, tenants' association, church or religious group, voluntary group, pensioners group, scout or youth group, professional organisation, working men's group, sports group, women's group, or any 'other' group.

Non-residential family network size is also explored throughout analysis. Together with community group activity, these variables aim to capture and control for the presence of an older adult's non-residential, non-friendship based social network. Familial networks are captured through the summation of several questions: The presence of a living non-residential mother, father, or stepmother of father, as well as the number of living non-residential brothers, sister, sons, daughters, grandchildren, grandparents, and great grandchildren. Wider family members such as aunts, uncles, nieces, nephews, or cousins are not captured in U-Soc and thus have not been included in these measures - a key limitation of this analysis. Like the community group activity measures described above, this composite family network size variable captures the number of non-residential family members, but not the nature or quality or these ties. This is another significant limitation of the analysis.

3.3.3.5.   Control Variables

The body of literature that explores the drivers of high wellbeing (high life satisfaction) is extensive. Study One includes the following control variables: age, gender, education, employment, tenure, nationality, and health. This section outlines the justification for their selection.

Age is a key focus of the investigation within this thesis, and the relationship between age and wellbeing has been discussed at length in section 2.3.

This study also controls for the role of gender. Despite average levels of life satisfaction being similar for men and women in the United Kingdom (Della Giusta et al., 2011) there is evidence to suggest that different factors influence the life satisfaction of men and women (*ibid*). For example, research by Della Giusta et al (2011) found that childcare and caring for adults affects women's life satisfaction negatively but is statistically insignificant for men. Although it is unlikely that the participants in this study will be rearing their own children after the age of 60, many of the sample are likely to be involved in active caregiving roles, such as caring for grandchildren and great grandchildren or caring for a spouse, parent, or other adult family member. It is therefore important to control for gender throughout the analysis.

Individuals who are British natives and live in neighbourhoods with minimal diversity are likely to have higher wellbeing due to increased opportunities for social support, and an increased sense of belonging (Srivastava et al., 2007). In contrast those who live in areas of high diversity and/or live outside their country of origin may experience reduced wellbeing (Longhi, 2014). Nationality is captured with a binary variable that determines if an individual is born in the United Kingdom or not. Ethnicity, although explored as potential control variable, is excluded from analysis due to low cell counts (see table 3.3). Eighty-eight percent of the sample report being British, English, Scottish, Welsh and/or Northern Irish. Even if all other ethnic groups were compiled into one category, which would arguably remove a great deal of the substantive interest of using ethnicity as a control, there would

still be insufficient cell counts to be able to conduct meaningful analysis. This is particularly the case after the household composition sub-samples have been divided.

Table 3.3: Frequency Statistics for the Ethnicity of Participants aged 60+

Variable: Ethnicity	Frequency N	Percentage	Cumulative Percentage
British/English/Scottish/Welsh/Northern Irish	9,956	88%	88%
Irish	139	1%	89%
Gypsy or Irish Traveller	2	0%	89%
Any other White background	254	2%	91%
White and Black Caribbean	20	0%	92%
White and Black African	14	0%	92%
White and Asian	21	0%	92%
Any other mixed background	20	0%	92%
Indian	308	3%	95%
Pakistani	140	1%	96%
Bangladeshi	47	0%	96%
Chinese	20	0%	97%
Any other Asian background	71	1%	97%
Caribbean	169	1%	99%
African	85	1%	99%
Any other Black background	10	0%	100%
Arab	11	0%	100%
Any other ethnic group	40	0%	100%

Source: Author's analysis of data from Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Figures have been rounded to the nearest percent

There is an extensive body of literature linking one's socio-economic status to their subjective wellbeing (Office for National Statistics (ONS), 2019b). Three variables are used to capture socio-economic status: employment status, highest educational qualification, and tenure. Income is not adopted as a measure of socio-economic status due to the large number of retired individuals in the sample. Research has found that those who own their own homes are likely to have higher life satisfaction (*ibid*), and unemployment is associated with lower wellbeing, but retirement is associated with higher wellbeing (*ibid*).

Two variables are used to capture health. The first captures whether an individual reports the presence of a long-term illness, disability, or impairment, the second captures an individual's self-reported heath status. Research has found that life satisfaction and self-reported health status are strongly related to one another and unidirectional (Kööts–Ausmees and Realo, 2015; Moreno-Agostino et al., 2021).

Self-reported health status is captured using a three-category simplification of a five-category scale (Excellent/very good, good and fair/poor). Presence of a long-term illness, disability or impairment is captured using a binary measure.

Marital status, also explored as a control, is excluded due the high level of empirical and conceptual similarity with household composition. The correlation matrix presented in Table 3.4 indicates that marital status and household composition have a correlation score over -0.3, this is the threshold for multi-collinearity checks.

Table 3.4: Collinearity Matrix with Marital Status and Household Composition

	Marital Status	Household Composition
Marital Status	1.0	
Household Composition	-0.3077	1.0

Source: Author's analysis of data from Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Figures have been rounded to the nearest percent

Cross-tabulations of marital status and household composition reveal conceptual similarities between the variables. Only two per cent of individuals who are married live without a partner, and only 4% of those who are widowed live with a partner (see table 3.5). This means that most married people are cohabiting with their spouse.

Table 3.5: Cross-tabulation of Marital Status and Household Composition

Frequency (Row percentage)	Household Composition				Total
Marital Status	Alone	Just Partner	Just Others	Partner and Others	
Single	551 (70%)	94 (12%)	121 (15%)	17 (2%)	783 (100%)
Married	70 (1%)	5,540 (79%)	60 (1%)	1,343 (19%)	7,013 (100%)
Separated/Divorced	983 (65%)	242 (16%)	241 (16%)	41 (3%)	1,507 (100%)
Widowed	1,569 (76%)	82 (4%)	403 (20%)	5 (0%)	2,059 (100%)
Total	3,173 (28%)	5,958 (52%)	825 (7%)	1,406 (12%)	11,362 (100%)
Chi2 9.0e+03 P<0.001					

Source: Author's analysis of data from Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Figures have been rounded to the nearest percent

3.3.3.6.   Analysis

Due to the complex survey design in U-Soc, all multivariate models are weighted. The svyset command was adopted with the survey weight [x_indpxui_xw]. This

accounts for non-response biases and for the hierarchical survey structure and clustered sample (Boreham, Boldysevaite, & Killpack, 2012); (Lynn & Kaminska, 2010). Multi-level models are not adopted firstly due to the use of this weighting strategy that accommodates the clustering of individuals within households and households within sampling areas. Moreover, the neighbourhood level random effects are not of theoretical interest to this PhD. The presence of single unit strata are treated as certainty units throughout the analysis, to allow for the estimation of standard errors (Longhi & Nandi, 2015). Out of 1,697 strata in total in the dataset 184 were single units before this adaption. These weights are designed by the U-Soc team to make the survey sample representative of the British population, however, the use of a sub-sample of individuals over the age of 60 in this analysis means that the same generalisations from the sample to the population may not be made as accurately (*ibid*). All analysis was conducted using the statistical software package STATA 15.0.

3.3.3.7.   Analysis Limitations

One limitation of cross-sectional analyses is its inability to estimate causal effects (Allison, Paul, 2009). As data is collected at one time point correlation can be conflated with causation and the directions of causality cannot be estimated (*ibid*). This is a key strength of the second thesis study that uses longitudinal panel data. Although care has been taken to control for confounding variables, the possibility that factors outside the models presented could be responsible for the relationship between friendship and wellbeing cannot be ruled out. Again, the second thesis study can counter this limitation as it conducts conditional fixed effects models that control for between individual difference (*ibid*).

3.3.4. Ethics: Data Management and Deletion

This research received ethical approval from the University of Southampton's Ethics and Research Governance Online committee on the 24th of April 2018 (submission ID 30672), see Appendix G. The primary ethical concerns for this study include the

storage, security and deletion of the data used. These issues apply across all three thesis research studies. Due to the use of personal data in this research project, several steps were taken to ensure compliance with the UK data archive data storage security requirements (UK Data Service, 2023). The data was only accessed on a University of Southampton laptop with a closely controlled LAN with restricted access. All data was stored on a password-protected University server and backed up on a password protected external hard drive. All hard copies of the data were kept in a locked filing cabinet in a secure location. The approved researcher, and author, had access to the raw data from the U-Soc Survey. This was discussed, and derived analysis shared with the PhD supervisory team (Prof. Athina Vlachantoni and Prof. Maria Evandrou). All data collected in this thesis will be deleted upon confirmation of completion of the PhD (approximately 2025). This will include the deletion of all digital and hard copies of the data (which will be shredded) using an eraser software. A data destruction form will be completed in less than a month after confirmation of PhD completion and sent to the UK Data Archive Team (UK Data Service, 2023).

There is little risk of participant identification within the quantitative analysis in this thesis, however, several steps have been adopted to ensure the anonymity of participants. Firstly, the data presented in any research outputs or published materials does not include cell counts with 5 or fewer cases, averages rather than exact numbers have been used wherever possible, and care has been taken to not report extreme outliers. No additional information about the participants, other than that deemed necessary to answer the research questions, has been presented.

3.4.   Study Two Methods: A Longitudinal Exploration of Friendship Loss and Subjective Wellbeing Change

3.4.1. Introduction and Research Aims

This second thesis study involves the longitudinal analysis of two waves of Understanding Society data (waves 3 and 9) six years apart. The main aim is to explore how friendship network loss is associated with a change in subjective wellbeing across time. The results are outlined in Chapter Five. The research questions are as follows:

> 1) What proportion of older adults in this sample report transitioning into friendlessness across a six-year observation period?

> 2) Is the loss of an older person's (60+) non-residential friendship network associated with a change in life satisfaction across a six-year observation period?

There are some similarities between the methodological approach in this study and Study One, where this is the case, the methods have not been reiterated in this section. For example, both chapters draw upon data in U-Soc thus the details of the survey structure and sampling methods are not discussed here. Both the ethics applications and strategy for data management outlined in sub-section 3.3.4 also apply to the analysis in this second study. This study also includes additional residential location data, linked at the Lower Super Output Area to survey participants. The ethical implications of linking data and using geographic data in analyses are outlined in section 3.4.4.

Section 3.4.2 will outline the ways in which the data and sample vary for this analysis from that in thew first study, outlined in section 3.3. Section 3.4.3 will continue to describe the methods used in this second study and will evaluate the pros and cons of this approach.

3.4.2. Data and Sample

3.4.2.1.   Wave Selection

This study employs data from wave 3 and 9 of Understanding Society approximately 6 years apart, see table 3.6.

Table 3.6: Data collection survey waves in Understanding Society

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wave Three									
Wave Four									
Wave Five									
Wave Six									
Wave Seven									
Wave Eight									
Wave Nine									

Source: Author's creation from the University of Essex (2017) 'Understanding Society UKHLS: Long term Questionnaire Content Plan'

The rationale for the selection of these survey waves is largely pragmatic. Although life satisfaction is collected across all the nine survey waves that were released at the time of analysis key friendship variables were only collected in waves three, six and nine (see table 3.7), therefore investigation was initially limited to these three timepoints.

Table 3.7: Variables captured in Understanding Society by Wave

	Wave One	Wave Two	Wave Three	Wave Four	Wave Five	Wave Six	Wave Seven	Wave Eight	Wave Nine
Life satisfaction (self-completion)	X	X	X	X	X	X	X	X	X
Social Networks			X			X			X
3 best friends			X			X			
Organisations			X			X			X
Neighbourhood Social Cohesion	X		X			X			X
Neighbours			X			X			
Family Networks			X		X		X		X

Source: Author's creation from the University of Essex (2017) 'Understanding Society UKHLS: Long term Questionnaire Content Plan'

As the study aims to explore unidirectional change it is more straightforward and efficient to explore change between two rather than three timepoints. Wave 9 was the most recent data release when analysis was conducted and was used through the analysis in the first thesis research study. Wave 3 was used as a first time point, rather than wave six, as it allowed for a longer observation period. More participants reported transitioning into or out of friendlessness in the gap between

wave 3 and 9 than 6 and 9, thus generating a larger analytical sample (see table 3.8).

Table 3.8: Frequencies of Transitions into Friendlessness between waves 3 and 9 and waves 6 and 9

Time Period	Transition Type	Frequency	Percent	Cumulative Percent
Wave six to wave nine* (three-year observation window	Still has Friends	17,356	96%	96%
	Gained Friends	275	2%	98%
	Lost Friends	252	2%	99%
	Still no Friends	63	1%	100%
Wave three to wave nine+ (six-year observation window)	Still has Friends	17,119	95%	95%
	Gained Friends	335	2%	98%
	Lost Friends	260	2%	99%
	Still no Friends	71	1%	100%

* Excludes individuals under the age of 60 at wave six
+ Excludes individuals under the age of 60 at wave three
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

One limitation of conducting research of this nature over a longer observation period is that it also increases the chance that other non-observable variables will have influenced the wellbeing of the participants, impacting the validity of the research. Fixed effects models were run for both the 3- and 6-year observation periods, however these did not produce particularly different conclusions. Appendix K provides greater discussion of this, including full models with both variations.

This second thesis research study is based on a strongly balanced panel data set with 7427 older adults (n) observed across two timepoints (t) together constituting 14854 observations or discrete data points. These are individuals who responded to all necessary survey waves and modules, are over the age of 60 at time point one (wave three). A second, aging in place sample is also explored for further analysis where those who have relocated neighbourhood across the observation period are excluded. These sample exclusion criteria are explored in greater depth below, as these act as point of differentiation between study one and two. Figures 3.2 displays flow charts of the construction of the analytical samples utilised in this study.

Figure 3.2: Study Two Analytical Sample Flow Chart, Full Sample
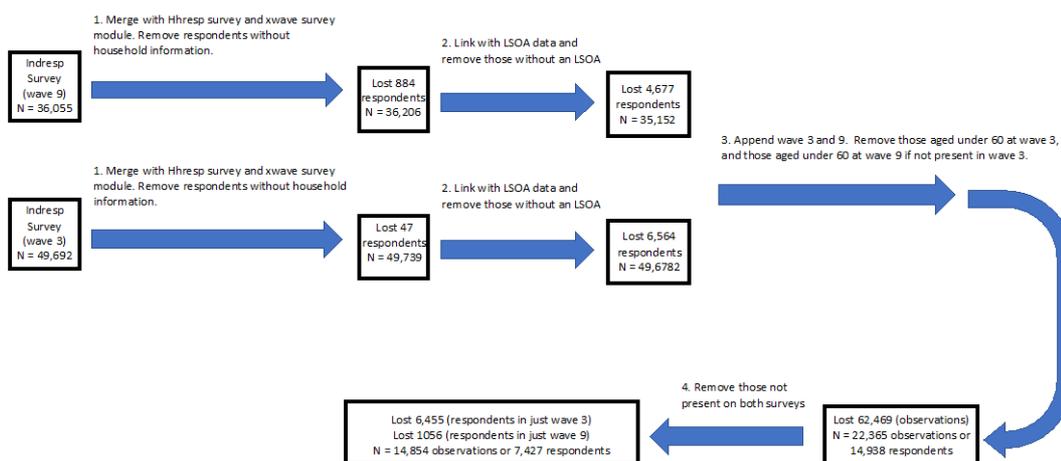
3.4.2.2.   Survey Response

6,455 individuals responded to wave three of the survey (timepoint one) but not again six years later (See table 3.9). It is important to recognise that there may be certain shared characteristics among those who dropped out of the survey potentially increasing sampling bias. Appendix I includes a discussion of the demographic differences between those who dropped out and those who remained in the survey, and Appendix J provides a comparison of the demographics between the two full samples.

Table 3.9: Frequencies of respondents by survey wave

Wave	N	Col %
Present in wave 3 and wave 9	7,427	66
Present in only wave 9	1,056	5
Present in only wave 3	6,455	29
Total	14,938	100

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

3.4.2.3.   Age

As well as the exclusion of individuals who did not respond to both waves of the survey, there is also a group of individuals who were previously included in study

one but excluded in this chapter due to the construction of the age cut-offs used. Study One included all individuals over the age of 60, who aged in place, at wave 9, however Study Two includes individuals over the age of 60 at wave 3. Therefore, individuals who were under the age of 60 at timepoint one (wave 3) but had their 60th birthday in the intermediary 6 years, would have qualified for analysis in Study One but are excluded from analysis in Study Two.

Study One utilises variables from the 'Indall', 'Indresp', 'Xwave', and 'Hhresp' modules of Understanding Society. In contrast Study Two does not utilise the 'Indall' survey module. The individuals that are excluded from analysis in Study One due to non-completion of the Indall survey module therefore remain in in Study Two.

3.4.2.4.   'Ageing in Place' and Residential Relocation

The neighbourhood an individual lives in, and the length of time they have spent there, are posited to have a strong influence on an individual's ability to generate and sustain friendships. See section 1.4.7 for a discussion of 'ageing in place' and section 2.5 for a discussion of the theoretical impact of one's 'social opportunity structure'. One of the unique contributions of this study is the ability to both explore samples that do and do not include those who have relocated home during the observation period. Home relocation is measured as a change in residential Lower Super Output Area (LSOA) between time point one and two. Survey respondents without a linked LSOA at both time points are excluded from analysis in both the full and aging in place samples. Residential relocations within an LSOA are not captured through this method. As Lower Super Output Areas are relatively small geographic units, a presumption is made that individuals may be able to sustain social networks during these very local moves. Although this is a limitation of the analysis, it affords participants greater anonymity, as postcodes and more detailed residential locations do not need to be disclosed. See section 3.4.4 for further discussion of the ethics in this analysis.

Study One does not capture the length of time an individual may have been resident in their current neighbourhood. Therefore, respondents who may have recently moved and/or do not hold linked geographic data remain in the analyses in Study One but are excluded in Study Two. Study Three, aims to control for the influence of residential relocation by sampling individuals who have lived in their homes for at least 10 years at the time of interview.

3.4.3.   Analysis

3.4.3.1.   Fixed Effects Model

Fixed effects models allow researchers to control for unobservable or unmeasurable time invariant variables. Each individual or participant acts as their own model control and within-individual change across time is instead observed. This approach means that all stable characteristics of that individual will be controlled for within the model. This reduces the number of necessary explanatory variables (Allison, Paul, 2009), and by averaging this individual effect across the population, you can approximate the average treatment effect of the intervention or dependent variable change (*ibid*). There are two major requirements for fixed effects models – the dependent variables must be measured at multiple timepoints, and the scales must be comparable. These are both satisfied in the models in this study.

The downside of this approach is that it cannot estimate the effect of variables that do not change overtime, such as size of friendship network at outset, gender, or education level. This is particularly problematic when greater variation is observed between individuals than within individuals, in these cases fixed effects models are quite imprecise. When applied to this study, there would need to be greater variation in one individual's friendship network across time than the variation between individuals.

3.4.3.2.   Variables

Many of the variables selected in Study Two are the same as in Study One, to aid analytical comparison. For example, life satisfaction adopts the same binary manipulation in the two studies. Several key differences have been made. Firstly, friendship network size, family network size and community group participation are reduced to binary outcome measures that indicate if one does or doesn't have a social participation of this type. Secondly, employment status is reduced to a binary indicator capturing if an individual is retired or not, bereavement is, added into the model as a potentially significant time variant factor and lastly, household composition is reduced to a simple binary indicator capturing if an individual lives in a solo-occupancy household or not. Self-reported health and the presence of an illness or disability are both used in the models. Appendix L outlines in full the variables in Study Two and how these have been manipulated from the original variables provided in Understanding Society.

3.4.3.3.   Analysis Limitations

The literature highlights several key issues with capturing social network change. Research by Cornwell *et al.* (2014) tracked specific alters within a five-year period showed that there was evidence of considerable social network turnover, with ties being both lost and gained leading to a replacement effect that is undetected in measures of overall social network size. As the data does not include unique identifiers for all an older person's reported friends, and this data would be unreasonable to collect in such a large social survey, there is no obvious strategy for determining if there are undetected replacement effects. Individuals could, therefore, report the same number of friends at the two time points, but these may be entirely different individuals. This is a major flaw in the study.

Furthermore, as the characterisation of a friend is subjective to each respondent, it is possible that across the observation period an individual may change their threshold for determining which individuals are defined as 'friends'. So, they may

report a larger friendship network at time point two than at time point one but be including more peripheral contacts at time point two. In this case a growing network could, in fact be a sign of a weakened rather than a strengthen friendship network. This follows the assumption that an individual who is confident and assured in their friendships may be more selective in their criteria for friendship inclusion and be more selective in the reporting of these friends in the survey, whereas an individual who is not confident or secure in their friendship networks may report a wider group of weaker friendships in the survey.

The limitations in this research study are somewhat compensated for in the third thesis study that explores friendship change in greater depth through the adoption of qualitative methods. Section 3.5 describes the methods used in the third study in more depth.

3.4.4. Ethics: Data Linking

Linking Lower Super Output Area (LSOA) data to the Understanding Society Survey increases the risk of identification within the survey. However, these risks are mitigated in several ways. LSOAs contain a population ranging from 1000 to 3000 per district, making relocations within an LSOA a less identifiable variable than the presence of an individual home relocation. Moreover, the actual geographic location of the LSOAs in question is not presented in the final analysis. Only the primary researcher and thesis author has access to the data itself and the LSOA geographic codes.

3.5.   Study Three Methods: A Qualitative Exploration of Friendship Network Maintenance/Change of Older Adults during the Second COVID-19 National Lock-down

3.5.1. Introduction and Research Aims

Situated within the critical realist approach (see section 3.2.3) that posits that social reality is most accurately observed through multiple lenses and methods, this third and final study within the thesis provides a counter but complimentary methodological approach to that adopted in the first two research studies. The first two studies (results presented in chapters 4 and 5) adopt a quantitative approach, analysing data on friendship networks, wellbeing and change in the UKHLS survey (Understanding Society). This study (results presented in chapter 6) in contrast adopts qualitative approach, utilising data from twenty, 1:1, remote, interviews. The research questions addressed in this research chapter are as follows:

1) How did the participants describe their friendship networks?
   a. How did the participants describe these friendships in the context of their wider social networks?
   b. How did the participants describe the impact that these friendships had on their wellbeing?

2) Did the participants describe experiencing any retrospective changes to their friendships because of the COVID-19 restrictions or otherwise?
   a. If not, why not?
   b. If so, was this associated with a change in their wellbeing?

The first two research studies explore the importance of friendship for an older adult's wellbeing, and the prevalence and wellbeing impact of friendship network change. Yet, these studies do not explore **how** older adults understand their

friendships and/or participate in this friendship network change - otherwise known as friendship processes. This is the focus of this third thesis study.

The COVID-19 pandemic is inextricably linked to the findings, methodology and design of this study. The interviews were conducted during the second national lock-down in England in November and December of 2020, and the pandemic likely had an impact on both the participants' abilities and desires to engage in socialisation behaviours. It is of great research interest to understand how the concepts, processes and mechanisms analysed throughout this thesis play out in a unique socialisation environment of the COVID-19 pandemic. COVID-19 provided a unique opportunity to assess the impact of an external trigger or shock on the social network management strategies of older adults. The background context to the pandemic is further discussed in section 2.5.3. This sub-section will continue to outline the approaches to recruitment, data collection, analysis adopted, before discussing the limitations and ethical considerations of the study. The methodological implications of conducting research during a pandemic have been discussed throughout.

3.5.1.1.   Corroborating Prior Analysis

There are several methodological limitations to the first two thesis research studies that this third study compensates for. Firstly, the friendship measures in U-Soc only capture one element of one type of relationship and thus arguably fail to capture the fundamentally relational and holistic nature of a social network. Moreover, as discussed in section 3.4.3.3, the first two studies measure change in aggregate network size rather than changes to an individual's friendship. In contrast this third study explores friendship change at the dyad level. Interview discussions of people's social networks are structured around the completion of a concentric circle convoy model. This allows for the collection of holistic, relational, and dynamic social networks, and a more accurate contextualisation of the role of a single friendship within one's complete network of social ties.

Secondly, despite the robustness of the scales collected and adopted in U-Soc, measures of health and subjective wellbeing are complex to statistically disentangle from one another and difficult to interpret accurately. This third research study helps to interrogate the conceptual differences behind these variables. Similar questions used within the analysis in the first two studies are included in the demographic survey to provide analytical comparability between the results in all three research studies. Crucially, this facilitates an opportunity for the participants to engage with the questions in Understanding Society and explain how or why they opted to respond in particular ways. This allowed the researchers to gain greater depth of understanding behind the quantitative results presented in the prior two research studies.

3.5.2. Recruitment

3.5.2.1.   Rationale

This study is based on 1:1 interviews with 20 individuals aged between 60 and 90 ageing-in-place in the neighbourhood of Barton-on-Sea in the New Forest in England. The participants were recruited through a purposive sampling approach (Palinkas et al., 2015), in which the study location was selected, and participants (who met the study exclusion criteria) were invited to participate. This was achieved by posting recruitment flyers through the doors of the homes within this study location. If a participant contacted the researcher to take part, their contact details were recorded, a date for a telephone or video interview was set, and a participation information pack was sent to their door. Participation information packs included a consent form, a pre-paid envelope, a participation information sheet, a handwritten Christmas card, an interview activity sheet, and a list of survey questions.

Individuals who may have few friends and/or may be otherwise disengaged from community activities or groups are often 'hard-to-reach' in qualitative research (Dare et al., 2019). Frequently used strategies for recruiting individuals such as

collaborating with community group gatekeepers or snowball sampling participants, are biased towards those who are already connected to others within the community. This bias is of particular concern due to the centrality of observing social isolation in this study. As a result a door-to-door recruitment approach ensures that information about the study reaches all individual's including those shielding and/or otherwise isolated from their wider communities.

The sample was selected from a single, relatively homogenous, neighbourhood. Research has shown the importance of culture (Burholt, 2023), socio-economic status (Cornwell, 2015), and neighbourhood (see section 2.5.3.1) on experiences of social isolation and loneliness; therefore, these were important variables to hold constant within the study. The rationale being that the individual differences in relationship management in response to the COVID-19 pandemic may be more easily observed if other factors influencing one's wider 'social opportunity structure' are controlled for.

To compare the findings in research study three to those in the former two research studies similar study samples are selected. Key exclusion criteria are specified on the participation flyer and clarified with participants either on their doorstep or in remote correspondence. The sample includes individuals over the age of 60, who have 'aged-in-place' (defined as individuals who have been resident in their homes for at least 10 years at the time of interview), and who are not living in age-specific housing (such as care homes or assisted living housing). The study location (Barton-on-Sea) was selected, alongside its homogenous demographics, due to the large numbers of older adults who live there and the low turnover rates of the resident population. This was deemed to be important to maximise the chance of recruiting participants that met the study criteria. More information about the study location and the rationale for its selection can be found in Appendix V and W.

Individual's caring for a household member were invited to participate, however, the most frequently cited reason for not participating was a lack of time due to

caring responsibilities. This means that the final sample includes a bias towards those who are more independent and physically able. One individual was excluded from analysis after interview as due to a lack of comparability in household composition with the rest of the sample, this is discussed further in section 3.5.3.

3.5.2.2.   The Impact of COVID-19

The British Government announced a second two-week national lock-down on the 31st of October 2020[6]. To ensure that all the participants were interviewed under the same restrictions, all recruitment was conducted in the 4 days between the announcement and the commencement of the lock-down. The study participants were subject to Tier One restrictions prior to this lock-down. In the interviews, participants not only reflected on their current friendships and the impact that these have on their wellbeing, but on the extent to which these changed across the eight months of government enforced restrictions and the wider socio-political climate induced by the COVID-19 pandemic.

This tight recruitment window had several impacts on the study. It was impractical to go to every door in the study location in the time available and without the resource or time to employ research assistants. Instead, only major streets across the area were selected, potentially biasing the sample. The first three days of recruitment were particularly poor weather. As a result, a disproportionately large number of participants were recruited on the final day when the weather was nice. This was because residents were outside walking pets, gardening, washing their cars, or were curious and voluntarily opened their doors when a flyer was posted through their letter box. The weather meant that participants were both more 'visible' and were happier to stand outside (as social distancing restrictions necessitate) to ask questions about the study. As a result, a large proportion of the participants sampled were individuals who lived in a small collection of streets targeted on this one specific day.

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[6] https://www.bbc.co.uk/news/uk-54763956

Several steps were followed to ensure that the risks of COVID-19 transmission were limited during these door-to-door recruitment activities. The researcher sanitised their hands between every premise, isolated from interaction with other individuals during the recruitment period, wore a face mask, stood at least 2 meters away from every front door, and at no point handed a flyer directly to an individual. Instead, these were always placed in a post box or other convenient location for the participant to read later. These steps, although necessary, likely impacted the ability for the participant and researcher to develop the immediate sense of trust and rapport that is necessary in both productive research and in engendering participation. Moreover, due to COVID-19 all interviews were conducted remotely (see section 3.5.4 on data collection) meaning that this door-step interaction for many of the participants was the only opportunity to meet the researcher, making it a particularly important stage. No individuals signed up to participate in the study from just a flyer through their doors, instead all participants who signed up had voluntarily engaged in some form of socially distant conversation with the researcher during the recruitment process.

On the other hand, arguably COVID-19 made recruitment easier than it otherwise may have been. Several participants expressed how the pandemic had inspired a desire to 'help out' and/or contribute to research. Moreover, one may presume that greater numbers of individuals were in their homes during the day to both meet the research and engage in the research due to the closure of other venues and activities. As recruitment was conducted during the day, 'key-workers' may have been less likely to have been sampled.

3.5.3. Sample

3.5.3.1.   Age, Gender and Household Composition

Despite the aim to recruit individuals from across all four household composition categories analysed in thesis Study One, 20 of the 21 interviewed participants either lived alone or with just a romantic partner. As a result, the single individual in

a more complex household composition was removed from analysis. Future research should be conducted to explore these more complex household formations. This leaves an analytical sample of twenty individuals from 20 households.

This analytical sample is comprised of 10 men and 10 women. All these individuals are, by design, resident in Barton-on-Sea, over the age of 60, not in age-specific housing and have been resident for over 6 years (aged-in-place). The full sample is outlined in Appendix W. The participants recruited also all own their own homes and are not in receipt of formal or informal care from outside of their households. Apart from two individuals, one in full-time employment and one on long-term sick leave, all participants are retired. Ten participants are in their seventies, the largest of any decade group (see Figure 3.3). In comparison only 2 participants are aged between 80 years old and 84 years old. This age distribution is worth note, and further research should be conducted with participants who are aged 80 and above. Moreover, research should be conducted exploring the social network changes of individuals with higher care needs, and/or individuals with higher levels of socio-economic vulnerability.

Figure 3.3: Count of Participants by Age and Gender

Figure 3.1: Count of participants by age and gender
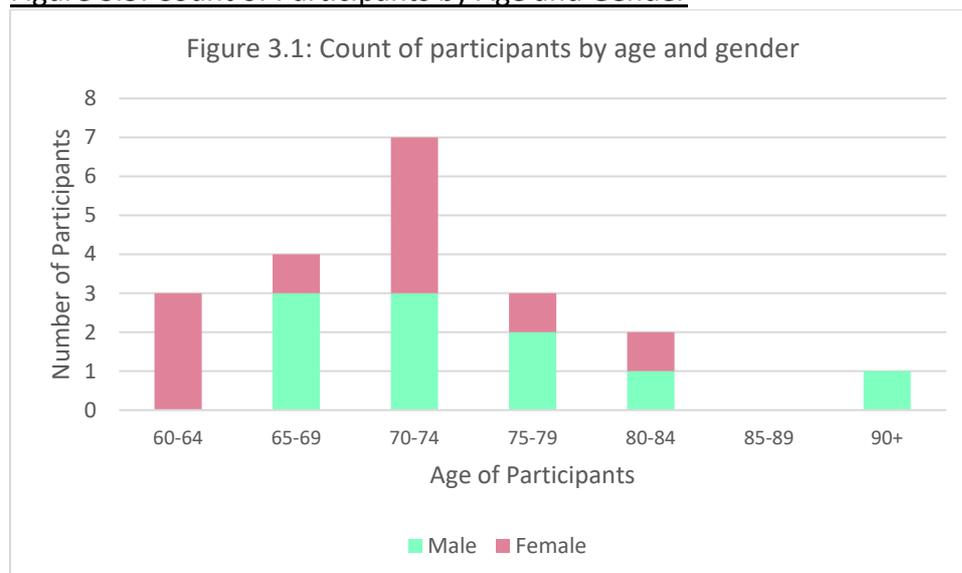
Source: Author's analysis of original data collected for the thesis

3.5.3.2.   Wellbeing

Two of the three participants in their early 60s (aged 60-64) report being dissatisfied with their life overall[7] with the remaining three age groups each containing one dissatisfied individual. Notably, the two individuals who are not retired are both dissatisfied with their life in general and in poor health. Only 50% of the female participants report being satisfied with their health compared to 90% of the male respondents, and 60% of women report being satisfied with their lives in general compared to 90% of male respondents. It is possible that this gender discrepancy in wellbeing score may be an artefact the participants willingness to show vulnerability and disclose negative emotions rather than being reflective of the actual prevalence of high or low wellbeing among the two groups.

3.5.3.3.   Health and Wellbeing

Greater numbers of participants report being satisfied with their lives (15/20) than report being dissatisfied with their lives in general (5/20)[8]. Similarly, more individuals report being satisfied with their health (14/20) than dissatisfied (6/20)[9]. Yet, this positive skew is slightly larger for life satisfaction than for health satisfaction. For example, no individuals report being completely or mostly dissatisfied with their lives in general, yet three participants express being mostly dissatisfied with their health. Interestingly, all the individuals who report dissatisfaction with their health or life in general also report the presence of a long-term illness, impairment, or disability. Yet, the inverse is not observed. Several participants, for example, report being somewhat satisfied with their health and life in general yet also report having long-term illnesses, impairments and/or disabilities. Further interrogation of the types of health issues reported can shed greater light on these patterns.

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[7] Includes those who are neither satisfied nor dissatisfied

[8] This includes one individual who was neither satisfied nor dissatisfied

[9] This includes two individuals who were neither satisfied nor dissatisfied

Figure 3.4: Count of Participants by Satisfaction with Health and Presence of a Long-standing Illness, Disability, or Impairment

Figure 3.2: Count of participants by satisfaction with health and presence of long-standing illness, impairment or disability
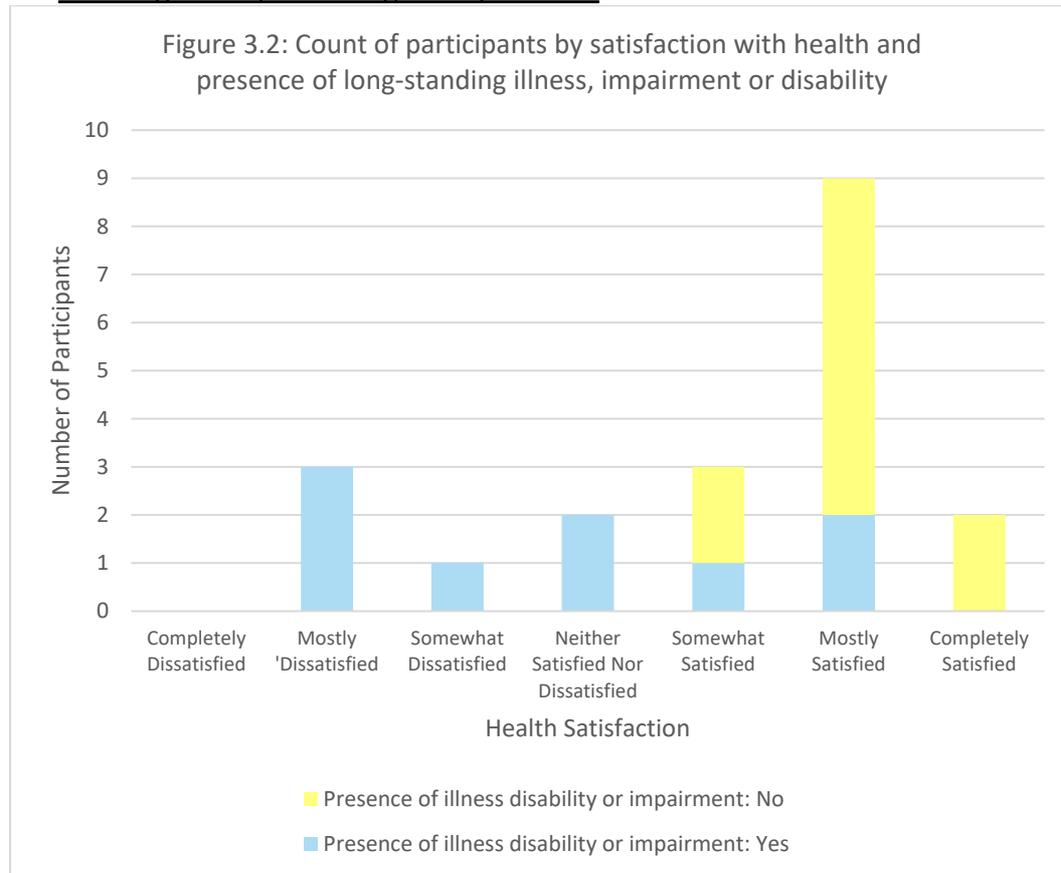
Source: Author's analysis of original data collected for the thesis

Figure 3.5: Count of Participants by Satisfaction with Life and Presence of a Long-
standing Illness, Disability or Impairment

Figure 3.3: Count of participants by satisfaction with life and presence of long-standing illness, impairment or disability
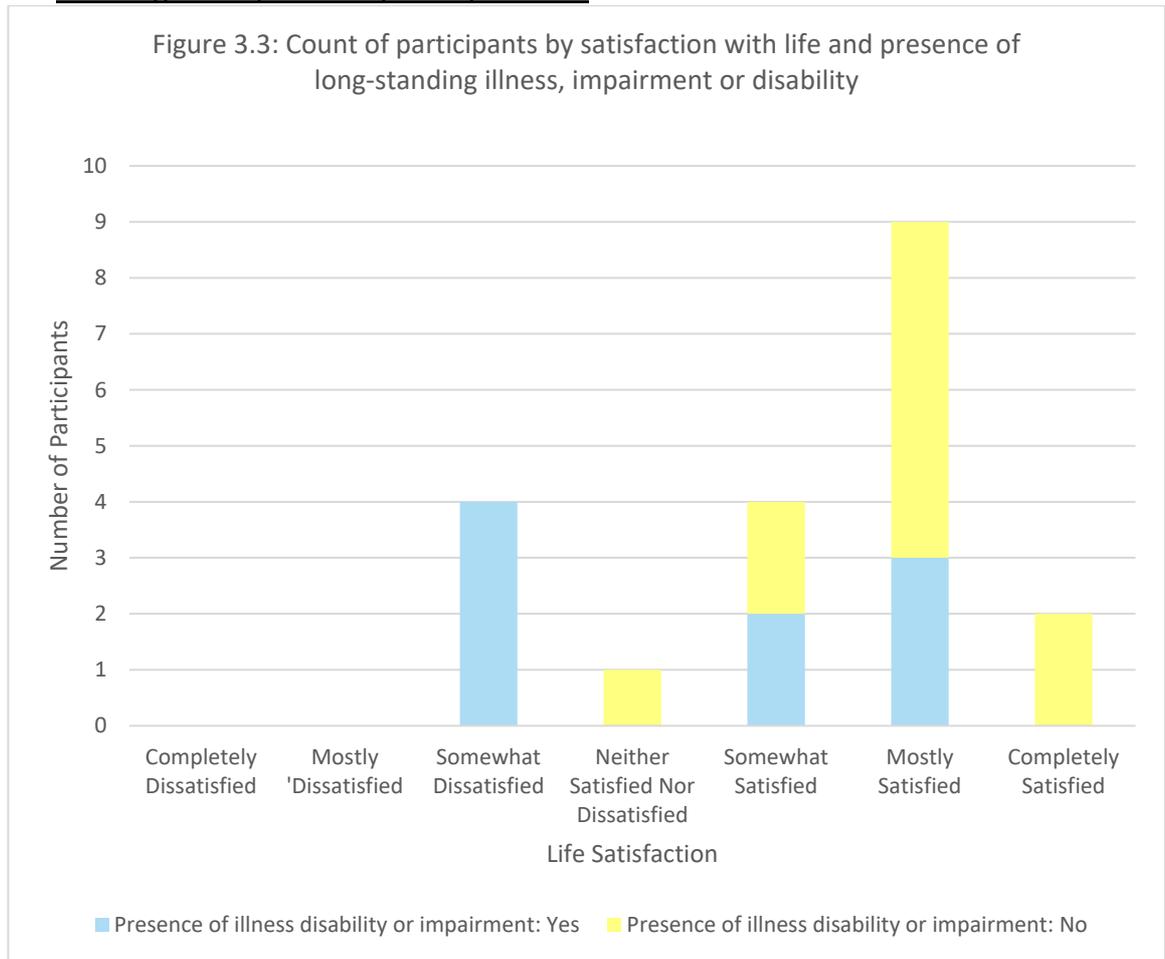
Source: Author's analysis of original data collected for the thesis

The individuals who are satisfied with their life and health but report having a long-term illness disability or impairment, tend to also report that their condition is under control (this includes conditions such as diabetes), or that they have a chronic, progressive but not particularly painful nor activity limiting condition. Narratives of appreciation and expectation are also clear here, where one's current health status is discussed next to their personal frame of reference for how they expect their health to be considering their age and experiences to date (see below).

"Well, I suppose in reality, diabetes is an illness, and it can have a large effect. At the moment. It isn't having a great effect on me, it is controlled. It's controlled by taking a whole series of tablets every day. I take about 10 pills a day. So, I suppose the answer is probably yes".

Richard (4), Male aged 70-74

"I've got things wrong with me. But you know I'm very upbeat, and I'm not going to die and it's not going to beat me. I'm being looked after as much as I can. …So, under the circumstances, all the things I had wrong with me, I guess I'm somewhat satisfied. I'm lucky to be alive. I do realize I'm very lucky to be alive".

Anne (20), Female aged 80-84

In contrast, the individuals who report having a long-standing illness, disability, or impairment and report being dissatisfied with their life in general and/or their health, tend to report having conditions that are either: not well managed; severely limit their activities of daily living; involve chronic pain; or have negatively influenced key decisions/trajectories throughout their life courses. Narratives of appreciation, expectation and comparison are also evident here.

"I've actually had that (Myalgic Encephalomyelitis, ME) for 20 years. So, I haven't worked for 20 years. … So, I didn't want to put completely dissatisfied. So, I put mostly dissatisfied for my health because it could be worse, you know, to be honest. So, whilst it's been not great and it's impacted on my life for I'd say 20 odd years, I always think, Oh, it could be worse. You know? And for the life overall, I have put somewhat dissatisfied. And that's mainly because, because of the health issue and the financial constraints, it's been really hard because what you get on benefits does not cover what you need in life. So, it, you know, I've been in debt several times. It really has been a struggle. … You know, so that's really why I didn't want to be sort of, Oh, no, I'm really dissatisfied with every bit of my life. Cause I'm not. But I said there are two big factors, the finances, and the health".

Dorothy (12), Female aged 65-69

In conclusion, future research should explore the thesis themes among different analytical samples. For example, with individuals who live with someone who is not their partner, individuals from different and more deprived neighbourhoods, individuals with higher care needs and/or individuals from diverse ethnic backgrounds.

3.5.4. Data Collection

The interviews in this study involved the collection of three types of data, with three different techniques. The first stage involved the use of a convoy model to aid a participant's recall of their past, current, and future social networks (see section 3.5.4.1). The second stage involved semi-structured interview questions prompting individuals to reflect on these relationships (see section 3.5.4.2) and the final stage involved the completion of a demographic survey (see section 3.5.4.3). These stages are discussed in more depth below.

3.5.4.1.   Convoy model

The convoy model (a concentric circle diagramme) is used to capture and analyse social networks. The respondent is visualised at the centre with the word 'You', and they are asked to place their social contacts on the circles of the diagramme that surround them. Each circle represents a different layer or level of closeness between the individual and their social contacts (see Appendix T for an example diagramme).

Without a framework like this, when individuals are asked to identify or discuss family, friends, and others who provide support, they often struggle to organize their thoughts. The task of differentiating and categorising different relationships can be confusing and onerous for respondents. This convoy method is, however, known to reduce respondent burden (Hogan et al., 2007). More structured approaches to collecting social network data, such as the close survey questions analysed in thesis study one and two fall prey to a different limitation. They often automatically include certain family or role-based relationships, for example assuming that a spouse or child provides support. As the convoy model doesn't have a strict structure, respondents have the freedom to include or exclude any type of relationship within their network and to describe these relationships with language relevant to them. This convoy method therefore does not equate the mere presence of social connections with the existence of positive interactions, which is often a problematic and questionable assumption. The model can therefore give respondents a structured way to describe their social networks without dictating the language of social categories that they should use to do so.

The following wording is used to stimulate discussions around the convoy models, see Appendix T for the full interview guide.

> *"I would like you to think about the people in your life who are important to you and those who contribute to your wellbeing. There need not be many or even any of these but if there is anyone could please place them on the diagram. Those who*

contribute most to your wellbeing in the centre and those who contribute least to your wellbeing further out".

This is different to the original question wording in the convoy model's as theorised by Toni Antonucci. In the original model the inner circle is described as "those people to whom you feel so close that it is hard to imagine life without", the middle circle is described as "people to whom you may not feel quite that close but who are still important to you", finally outer circle members are described as "people whom you haven't already mentioned but who are close enough and important enough in your life that they should be placed on your personal network". The uniqueness of the question wording used in this thesis limits the generalisability of the research findings. Future research should explore whether these findings are consistent with those collected using Antonucci's methodology.

Participants were sent an empty convoy model to complete during the interview and an example convoy model before the interviews to aid comprehension. As the interviews were remote (either online or over the telephone) the researcher could not determine if the convoy models were being completed as desired. After the interviews, respondents were asked to return their convoy models with their consent forms in the pre-paid envelopes provided. Of those who returned their convoy models all had their current network drawn out with no record of their past or future networks, despite discussing these in detail during the interviews. In future research, particularly if conducted face to face, three separate convoy models may encourage better completion. This approach was not adopted in this study to simplify the research for participants. Several participants described finding utility in the inclusion of the convoy model prompt.

The convoy model's are "easy and difficult. Sometimes you think you know the answer straight away, but when you go a bit deeper and you think, oh, hang on a bit now, is that right? … You think, ah, do I really think of them as on the outside or are they a bit closer in? Because, you know, maybe with my two closer friends that I've put not quite as close you think, well why did I do that? But I do know why, it's because I wouldn't probably disclose as much with them as I would [best friend]. So yeah, it was interesting to do"

Ruth (14), Female aged 60-64

3.5.4.2.   Semi-structured Interview

The second interview stage involved a series of semi-structured questions that prompted the participants to discuss how their relationships, identified in the convoy model, had changed in the past and were expected to change in the future. As well as to the discuss the ways that the relationship in question contributed to their wellbeing and if there were any tools or practices that helped or hindered the maintenance of the relationship.

Retrospective accounts (those that require participants to remember past events) have been found to be unreliable and indirect (McLeod and Thomson, 2009). The true nature of the event itself cannot be uncovered. Instead the meanings of the past event are observed as interpreted by the participant in the present (Bernard et al., 1984; Brewer, 2000). Although this limits the generalisability of the research findings, it arguably provides a useful view into the aspects of friendship that held greatest salience for older adults and the ways that they were remembered, even though they may not be accurate depictions of the relationships (McLeod and Thomson, 2009). Authors have used historic landmarks, events or even old photographs in a variety of attempts to increase the reliability of retrospective accounts (Loftus and Marburger, 1983; Marin and Lin, 2020). The COVID-19 Pandemic arguably provides a 'cognitive anchor' for people to think about their retrospective friendships, in the same way that a photograph or landmark may do (*ibid*).

3.5.4.3.   Demographic Survey

The final stage of the interview involved the participants answering questions about their health, wellbeing, and demographic characteristics. These questions were closed-answer categorical questions and were sent to the participants before the interview (see appendix T for the full survey).

The questions were like those posed in Understanding society and utilised in thesis study one and two but were, in places, adapted. The age variable used in understanding Society is a continuous derived variable (age_dv). In studies one and two it is transformed into a categorical variable and all participants under the age of 60 are removed from the sample. In this study participants are given the categorical version of this age variable used in the thesis research studies, not the version included in understanding society.

Sex (sex_dv), marital status (marstat), employment (jbstat), nationality (UKBORN) and the presence of a long-standing physical or mental impairment, illness or disability (health) are identical in question and response wording to the matched questions in Understanding Society.

For the tenure and education questions the response categories are identical to those computed in the derived variables used (tenure_dv qf_high_dv) in Understanding Society. These variables are derived from several others so the questions themselves have been generated.

3.5.4.4.   The Impact of COVID-19

To comply with social distancing measures all interviews were conducted remotely rather than face-to-face as initially planned. To make remote participation more accessible, interviews were conducted either over the telephone or on the video conferencing platform Microsoft Teams. One to one, rather than focus group interviews, were selected due to the sensitive and personal nature of the subject matter, as well as the research interest in ego-centric social networks. These interviews were, by nature of being remote in a national lock-down, all conducted from both the researcher and the participants own homes. This has the benefit of allowing the participant to speak in a place of comfort and ease. However, it also limits the privacy afforded to the conversation as participants responses may have been impacted by the presence of another off-screen household member.

Conducting interviews remotely also has implications for the logistics of both receiving and sending interview materials. For example, the interview sheets with convoy models and demographic surveys had to be sent in advance of the interview with the participant information sheets and consent forms. All letters were isolated for 24 hours in a safe location before being opened to minimise the risk of infection. Despite the inclusion of instructions for the participants to not fill these out until the interview had commenced and could be explained by the researcher, some participants filled these in ahead of time. This may have introduced an inconsistency in the degree of spontaneity of response between individuals. Moreover, each participant was given a pre-paid envelope in which to return their signed consent forms and completed convoy models. Several participants sent their consent forms back without their completed models. This combined with an inability to visually see a participant filling the convoy models out means that the accuracy of the diagrams may lack precision and involve inference.

The researcher contracted COVID-19 after this recruitment period and was unwell during the interviews. As the interviews times and dates had been pre-arranged these continued in the planned remote fashion. However, this illness undoubtedly had an influence on the researcher's energy and rapport during the conversations.

3.5.5. Analysis

The interviews were transcribed using the automatic transcription engine in the computer-assisted qualitative data analysis software (CAQDAS) Dovetail[10]. These transcriptions were then checked by the researcher for errors whilst gaining a deeper familiarisation of the interview content. The transcriptions were checked by the thesis author only.

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[10] https://dovetail.com/

The first stage of analysis involved the creation of a spreadsheet with each participant and their responses to the demographic survey, a quantification of their convoy model responses and some key quotes that summarised the individual and the content of the interview. This allowed the research a broad view of the sample and observation of any relationships between a participant's demographics and convoy model.

The second stage of analysis involved the generation of initial themes. This thematic coding was conducted using the computer-assisted qualitative data analysis software (CAQDAS), Dovetail[11]. This analysis was conducted by the primary researcher alone, emergent themes were discussed with the wider supervisory team. Initial themes were generated within the broader categories of 'friendship structures, friendship and wellbeing, friendship change, barriers to friendship creation/maintenance and enablers of friendship creation/maintenance. Themes related to COVID-19 specifically were also separately drawn out. These included but are not limited to the use of technology, interaction negotiations, and the impact of the built environment on social distancing behaviours. A full list of initial themes can be found in appendix X.

The interviews also stimulated themes specifically related to the relationships respondents held with their romantic partners, pets, and families. Broad parallels were drawn between the narratives around friendship and those emergent in the other relationship types. Due to the focus of the thesis, a decision was made to just explore friendship ties in the next stage of analysis.

The final stage of analysis involved categorising the types of friendship into friendship archetypes: those that were described with similar language, were described as having similar structural features, and/or a similar impact on wellbeing were grouped together. The previously analysed themes were then mapped against

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[11] https://dovetail.com/

these. Neighbours and community group members were included as a type of friendship

3.5.6. Ethics: COVID-19 and Emotional Sensitivity

Information security, participant distress and the risk of COVID-19 infection are the main ethical risks involved with this third research study. The strategies adopted to mitigate against the risk of COVID-19 infection have been outlined above, including taking measures to avoid face-to-face interaction with participants and to uphold strict social distancing practices. Many participants described relationships that were emotionally traumatic, discussed topics of grief and/or bereavement or described experiencing challenging emotions such as loneliness, guilt, sadness, anger, frustration, or resentment in their interviews. Discussing these topics during a time in which social relationships may be particularly strained (due to the national lock-down) could potentially increase the chance of emotional distress. At the outset participants were instructed that were not obliged to discuss anything they may feel uncomfortable with. If individuals at any point appeared to be negatively affected by the subject matter of the conversation, they were again reminded of their opportunity to pause and/or end the interview. On two occasions participants stated that they did not want to talk about their relationships with a particular family member, and this wish was respected.

Consent forms and participant information sheets were sent to participants in advance of the interview (see Appendix T). Before, an interview began the researcher confirmed that the participants has received, read, and signed the relevant forms. These consent forms were then signed and sent back to the researcher. First class royal mail postage was used to ensure the security of this information. The interviews were transcribed verbatim, using the software dovetail, and these recordings were deleted once the transcriptions had been made. The participant's consent forms and a code book connecting each participant with their data were stored in a university drive that is both encrypted and password

protected. See section 3.3.4 for information on data management, storage, and deletion.

The contributions from all participants have been pseudonymised and any identifiable characteristics have been removed. The town from which these participants were recruited has, however, not been anonymised (Barton-on-Sea). With a total population of 5,585, and a population over the age of 60 of 3320 (59%) identification of the study participants is unlikely. Gaining a full view of the demographic, cultural, and geographic fabric of the neighbourhood is critical to understand the potential for friendship formation of the participants, and therefore necessary information for readers to assess the generalisability of these findings.

3.6.   Conclusion

This chapter summarises the strategy and execution of the methods behind each of the three research studies that comprise this thesis. Adopting a sequential multi method design, the thesis tackles several different but related research questions in each of these three studies. The first results chapter (chapter four) explores the association between older people's friendship networks and their life satisfaction, examining how these vary by household composition. This is achieved using cross-sectional binary logistic regression analysis of data in Understanding Society: The UK Household Longitudinal Survey (U-Soc). The second results chapter (chapter five) explores multiple waves (3 and 9) of this same survey to examine the impact of a transition into friendlessness on subjective wellbeing. The third results chapter (chapter six) then builds on the findings in the previous two research studies by drawing upon primary data from twenty, 1:1 remote, interviews collected during the COVID-19 Pandemic in 2020. This data is used to explore how older adults understand and manage their friendship networks during this unique period.

This adoption of multiple methodological techniques to interpret multiple different types of data allows for a full and rich understanding of late-life friendship. The

same questions utilised in the first two quantitative research studies were given to the participants in the third research study to gather analytical depth behind these variables and strengthen the understanding and analysis of friendship in later life. No methodology is without limitation and the limitations of each of these approaches have been discussed in greater depth in section 7.3. Additional information on the methods adopted and robustness checks for all the models can be found in the appendices. The next three chapters will continue to outline the results for each of the three research studies, before a discussion of the implications of these results for policy and practice is outlined in Chapter Seven.

4. <u>Study One Results: Cross-sectional Exploration of the Relationship between an Older Adult's Friendship Network and their Life satisfaction</u>

4.1.   Introduction

This thesis, which examines friendship and wellbeing, intuitively begins with the foundational question: does having a friend (and then more than one friend) make an older adult more likely to be satisfied with their lives? This chapter (see section 4.2) will seek to answer this question for both the whole sample (individuals aged over 60 at wave 9 of Understanding Society) and for four different sub-samples denoted by their household composition: individuals living with a partner, individuals living with a partner and one or more others, individuals living alone and individuals living with just one or more others. The chapter will also examine if this relationship between friendship presence and size on wellbeing varies by household composition, differently to that of family network size on wellbeing and/or community group participation on wellbeing (see section 4.2.2). Ultimately the chapters aim is to understand the role of an older adult's friendship network, within the wider context of their residential (household) and non-residential (familial and community) social relationships, on their wellbeing.

As highlighted in the literature presented in Chapter Two, it is quality as well as quantity that is critical in understanding the impacts one's friends have on their wellbeing (Rafnsson et al., 2015). Therefore, beyond the ***presence and size*** of older adult's friendship networks, section 4.3 explores the ***nature*** of older adult's friendships. This analysis explores, the geographical proximity of an older adult's friendship network, the homophily (or similarity of their friendship network to themselves, in terms of age, ethnic group, education, and income), the multiplexity of their friendship network (denoted by the proportion of their friends who are also familial networks), and the frequency with which they interact with their friends online. This is conditional on the respondents having reported that they have at least one friend. The aim of this analysis is to explore if and how the friendship

networks of individuals in each of the four household composition categories may differ to one another. This will add greater depth of understanding to any variation in the impact of friendship on wellbeing between household composition groups observed in the first stage of analysis.

The analysis throughout the chapter is primarily based on the use of cross-sectional, binary, logistic regression models utilising wave 9 of the UK Household Longitudinal Survey (U-Soc). All models control for a range of demographic and social network factors that have been found to be independently associated with wellbeing (see section 3.3.3). Exploratory background analysis of the relationships between various variables used within these models is provided in Appendix C.

The second and third research studies (results presented in chapters 5 and 6), continue to build on this analysis: firstly, with an exploration of longitudinal friendship network change and life satisfaction and secondly, with a qualitative enquiry into the impact of COVID-19 on friendship network change and wellbeing in later life.

4.1.1. Research Approach

Aim: To explore the role of household composition in mediating the importance of friendship based social ties on older adult's (60+) subjective wellbeing.

Research Questions: 1) How is the presence and size of an older adult's friendship network associated with their life satisfaction?

1a) How does the relationship between the presence and size of one's friendship network and their life satisfaction differ from the relationship between their familial network size or their community organisation activity and their life satisfaction?

1b) How does the relationship between the presence and size of one's friendship network and their life satisfaction vary based on their household composition?

2) How do the friendship networks of individuals in different household compositions vary in nature (the proximity of the friends, the similarity of the friends to the ego in terms of age, ethnic group, education and income, multiplexity of the friendship network and frequency of interacting online)?

Method:	Binary logistic regression model
Data:	Wave 9 of UKHLS: Understanding Society.
Dependent Variable:	Wellbeing (binary life satisfaction measure)
Independent Variables:	Friendship (size, proximity, frequency of online interaction, homophily, and multiplexity)
Sample:	Four household composition group sub-samples: live alone, live with a partner, live with a partner and other individuals, live with just other individuals.
Control Variables:	Age, sex, marital status, education, tenure, ethnic group, employment, nationality, health, family network size, community organisation activity.

4.2. Friendship, Family and Community Group Participation, Household Composition, and Life satisfaction

4.2.1. Bivariate Analysis of Friendship Network Presence/Size and Life satisfaction

Only 6% (n=689) of individuals in this sample report that they have no close friends (Table 4.1). In contrast, 9% (n=1,052) of individuals report having no non-residential

living family members and 48% (n=5,276) of individuals report not being active in a community organisation. This indicates that friendlessness (a lack of friendships) is experienced by fewer older adults than those who experience a lack of family network or community organisation inactivity. Interestingly, individuals report having both larger and smaller family networks in greater numbers than they do friendship networks. Friendship network size is a less distributed variable with greater concentration around the mean value (2-5 friends). Twenty-eight percent of individuals report actively participating in one of the listed organisations, giving this variable the smallest range across the three social network measures.

Table 4.1: Frequencies for Non-residential Close Friendship Network Size, Community Organisation Activity and Family Network Size

Non-residential Friendship Network Size		
	No.	Col %
No Close Friends	689	6%
1 Close Friend	594	6%
2-5 Close Friends	5,449	50%
6-10 Close Friends	3,076	28%
>11 Close Friends	1,078	10%
Total	10,886	100%
Non-residential Family Network Size		
	No.	Col %
No Family	1,052	9%
1 Family member	716	6%
2-5 Family members	3,472	30%
6-10 Family members	3,804	33%
>11 Family members	2,329	21%
Total	11,373	100%
Community Organisation Activity		
	No.	Col %
No Organisations active in	5,276	48%
1 Organisations active in	3,095	28%
>2 Organisations active in	2,624	24%
Total	10,995	100%

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society
Outputs are not weighted
No controls added

Two notable findings can be seen when exploring the relationship between friendship network size and household composition (see table 4.2). Firstly, the proportion of people who report having no close friends among those who live with just others (12%) is almost double that observed across the other three household compositions (approx. 6%). A second notable finding is that the proportion of individuals who live with just a partner, who report having over eleven close friends (12%) is almost double that of individuals who live with just others (6%) and greater than those who live alone (9%) and those who live with a partner and others (8%). In short, those who live with just others are the group with the smallest friendship networks and those that live with just a partner are the group with the largest friendship networks.

Table 4.2: Cross-tabulation of Friendship Network size by Household Composition

Friendship Network Size	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
No Close Friends	219	7%	293	5%	90	12%	87	7%	689	6%
1 Close Friend	212	7%	260	5%	43	6%	79	6%	594	6%
2-5 Close Friends	1,615	52%	2,735	48%	403	53%	696	53%	5,449	50%
6-10 Close Friends	818	26%	1,747	31%	172	23%	339	26%	3,076	28%
>11 Close Friends	267	9%	655	12%	47	6%	109	8%	1,078	10%
Total	3,131	100%	5,690	100%	755	100%	1,310	100%	10,886	100%
Pearson chi2(12) = 143.4651 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society
Outputs are not weighted
No controls added

These trends may simply represent the age profile of these different household composition groups. As the exploratory statistics in Appendix B demonstrate, those who live with just 'others' are the oldest group and the group in the poorest health. Whereas those who live with just a partner are one of the youngest household composition groups. Poor health may make it difficult to maintain friendships, for example due to mobility impairments, and age may be associated with an increased odds that one's peers will be deceased. This is explored further in the multivariate models in section 4.2.3.

When examining the impact of friendship network size on wellbeing the proportion of individuals reporting high wellbeing increases with each larger friendship size category (see table 4.3). For example, when looking at the full sample the proportion of older adults who report high wellbeing increases from 65% for those with no close friends to 77% for those with one close friend, and then on to 78% for those with 2-5 close friends and 85% for those with 6-10 close friends. The biggest change in the proportion reporting high wellbeing between these friendship size categories appears when comparing those with no friends and those with one friend, with smaller changes between groups with subsequently larger friendship networks. For example, among those who live with a partner and others, 42% of those who report having no friends also report low life satisfaction compared to only 26% of those who report having one friend.

Table 4.3: Cross-tabulations of satisfaction with life and friendship network size by household composition

	Satisfaction with Life					
	Low Life Satisfaction		High Life Satisfaction		Total	
Full Sample						
Friendship Network Size	No.	Row %	No.	Row %	No.	Row %
No Close Friends	211	35%	390	65%	601	100%
1 Close Friend	125	23%	412	77%	537	100%
2-5 Close Friends	1,127	22%	4,029	78%	5,156	100%
6-10 Close Friends	462	16%	2,511	85%	2,973	100%
>11 Close Friends	143	14%	906	86%	1,049	100%
Total	2,068	20%	8,248	80%	10,316	100%
Pearson chi2(4) = 163.7192 P=<0.001						
Household Composition: Alone						
	Low Life Satisfaction		High Life Satisfaction		Total	
Friendship Network Size	No.	Row %	No.	Row %	No.	Row %
No Close Friends	69	35%	128	65%	197	100%
1 Close Friend	43	23%	147	77%	190	100%
2-5 Close Friends	368	24%	1,149	76%	1,517	100%
6-10 Close Friends	146	19%	630	81%	776	100%
>11 Close Friends	37	15%	219	86%	256	100%
Total	663	23%	2,273	77%	2,936	100%
Pearson chi2(4) = 35.8634 P=<0.001						
Household Composition: Partner Only						
	Low Life Satisfaction		High Life Satisfaction		Total	
Friendship Network Size	No.	Row %	No.	Row %	No.	Row %
No Close Friends	77	30%	182	70%	259	100%
1 Close Friend	50	21%	191	79%	241	100%
2-5 Close Friends	465	18%	2,170	82%	2,635	100%
6-10 Close Friends	228	13%	1,480	87%	1,708	100%
>11 Close Friends	74	12%	572	89%	646	100%
Total	894	16%	4,595	84%	5,489	100%
Pearson chi2(4) = 63.2934 P=<0.001						
Household Composition: Others Only						
	Low Life Satisfaction		High Life Satisfaction		Total	
Friendship Network Size	No.	Row %	No.	Row %	No.	Row %
No Close Friends	33	49%	35	52%	68	100%
1 Close Friend	13	39%	20	61%	33	100%
2-5 Close Friends	120	33%	241	67%	361	100%
6-10 Close Friends	33	21%	128	80%	161	100%
>11 Close Friends	10	24%	32	76%	42	100%
Total	209	31%	456	69%	665	100%
Pearson chi2(4) = 20.8080 P=<0.001						
Household Composition: Partner and Others						
	Low Life Satisfaction		High Life Satisfaction		Total	
Friendship Network Size	No.	Row %	No.	Row %	No.	Row %
No Close Friends	32	42%	45	58%	77	100%
1 Close Friend	19	26%	54	74%	73	100%
2-5 Close Friends	174	27%	469	73%	643	100%
6-10 Close Friends	55	17%	273	83%	328	100%
>11 Close Friends	22	21%	83	79%	105	100%
Total	302	25%	924	75%	1,226	100%
Pearson chi2(4) = 25.6934 P=<0.001						

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Sample includes individuals over the age of 60 in wave 9 of Understanding Society

Outputs are not weighted

No controls added

There are also some notable differences in the relationship between friendship network size and life satisfaction across household composition sub-samples. The direction of the relationship between friendship network size and life satisfaction is consistent across household composition groups (i.e., the groups with more friends have larger proportions of individuals with high wellbeing), however, the strength of this relationship varies. Among those who live with just a partner, there is an 18-percentage point difference in the proportion that report high satisfaction with life between those who have no friends and those who have over 11 friends. In contrast, when exploring the same results among those who live with just others a 25-percentage point difference can be seen. Twenty-one and 20 percentage point differences are observed among those who live with a partner and others and those who live alone respectively.

In short, it appears that those who live with just others, not only more frequently report having fewer friends but are also the group with the largest difference in life satisfaction scores amongst those with and without friends. This suggests that friends potentially matter more for the wellbeing of individuals in this group. In contrast, higher proportions of those who live with just a partner tend to report large friendship networks, and there is a smaller difference in the life satisfaction scores of those with and without friends within this group – suggesting that for individuals within this group having friends may matter less for their wellbeing.

Another interesting trend that can be observed between household composition groups is the proportion who report high or low life satisfaction among those with no close friends. This is arguably an indicator of each sub-samples baseline wellbeing level. Among those who live with just others and have no close friends, 49% report low life satisfaction. This is higher than in any other household composition group suggesting that individuals who live with just others may start out with lower base-line levels of life satisfaction. This could partially explain why, within this household composition the proportions of individuals that report high life satisfaction rises so dramatically between groups with increasingly large

friendship networks. The presumption being that if one has low baseline wellbeing to begin with there is more relative 'room for improvement' or capacity for a friendship network to boost wellbeing. However, among groups that start out with high wellbeing at the outset, such as those who live with just a partner, there may be less observable benefit for a large friendship network to bring.

These unweighted and bivariate results suggest that, in general, people with no friends are more likely to have low life satisfaction than those with large friendship networks, but also that the power of a single friend is considerable. There are some early signs that friendship networks may not hold equal value across individuals in different household compositions, both due to differing 'baseline' levels of life satisfaction and due to the strength of association between friendship network size and life satisfaction. Those who live with just others fare the worst in these early statistics and those that have just a partner the best. Yet it is important to note that these statistics are not weighted and are descriptive, therefore, these trends may reflect other characteristics of these household composition groups, such as age and health. This analysis is continued through multivariate binary logistic regression models to examine if these patterns remain stable with the inclusion of controls and survey weighting (see section 4.2.3).

Individuals do not hold friendships in isolation from others in their social network, and it is important to also recognise the web-like nature of social relationships. A brief discussion of the bivariate association between the presence of activity in community organisations or the size of one's familial social network on their life satisfaction is provided below. Comparisons are drawn throughout to understand the differences between, familial/friendship networks and community organisation activity on life satisfaction by household composition.

4.2.2. Bivariate Analysis of Family and Community Group Participation and Life Satisfaction

4.2.2.1.   Family Network Size

As is previously indicated, the proportion of individuals who report high life satisfaction is larger for groups that report having bigger friendship networks. Yet, a very different picture emerges when exploring family network size (see table 4.4). Across the household compositions there is a range of between 2 and 8 percentage point difference in the proportions reporting high life satisfaction between those who report no family members and those who report over 11 family members. This indicates that larger families are associated with higher wellbeing but by a lesser degree than large friendship networks. Larger percentage point differences are observed in the proportions reporting high life satisfaction between those with the smallest and largest friendship networks.

Table 4.4: Cross-tabulations of satisfaction with life and family network size by household composition.

	Life Satisfaction					
	Low Life Satisfaction		High Life Satisfaction		Total	
Full Sample						
Non-residential Family Network Size	No.	Row %	No.	Row %	No.	Row %
No family	186	26%	533	74%	719	100%
1 family member	136	20%	545	80%	681	100%
2-5 family members	655	20%	2,673	80%	3,328	100%
6-10 family members	680	19%	2,939	81%	3,619	100%
>11 family members	467	22%	1,687	78%	2,154	100%
Total	2,124	20%	8,377	80%	10,501	100%
Pearson chi2(4) = 22.2813 P=<0.001						
Alone						
	Low Life Satisfaction		High Life Satisfaction		Total	
Non-residential Family Network Size	No.	Row %	No.	Row %	No.	Row %
No family	59	25%	180	75%	239	100%
1 family member	46	19%	198	81%	244	100%
2-5 family members	209	23%	686	77%	895	100%
6-10 family members	211	22%	732	78%	943	100%
>11 family members	147	23%	506	78%	653	100%
Total	672	23%	2,302	77%	2,974	100%
Pearson chi2(4) = 2.8734 P=0.579 (not significant to the 0.05%)						
Partner Only						
	Low Life Satisfaction		High Life Satisfaction		Total	
Non-residential Family Network Size	No.	Row %	No.	Row %	No.	Row %
No family	75	22%	261	78%	336	100%
1 family member	42	17%	206	83%	248	100%
2-5 family members	247	15%	1,441	85%	1,688	100%
6-10 family members	334	16%	1,824	85%	2,158	100%
>11 family members	224	19%	944	81%	1,168	100%
Total	922	17%	4,676	84%	5,598	100%
Pearson chi2(4) = 20.3152 P=<0.001						
Others Only						
	Low Life Satisfaction		High Life Satisfaction		Total	
Non-residential Family Network Size	No.	Row %	No.	Row %	No.	Row %
No family	27	42%	37	58%	64	100%
1 family member	19	26%	54	74%	73	100%
2-5 family members	73	32%	154	68%	227	100%
6-10 family members	46	26%	130	74%	176	100%
>11 family members	52	38%	86	62%	138	100%
Total	217	32%	461	68%	678	100%
Pearson chi2(4) = 9.0788 P=0.059 (not significant to the 0.05%)						
Partner and Others						
	Low Life Satisfaction		High Life Satisfaction		Total	
Non-residential Family Network Size	No.	Row %	No.	Row %	No.	Row %
No family	25	31%	55	69%	80	100%
1 family member	29	25%	87	75%	116	100%
2-5 family members	126	24%	392	76%	518	100%
6-10 family members	89	26%	253	74%	342	100%
>11 family members	44	23%	151	77%	195	100%
Total	313	25%	938	75%	1,251	100%
Pearson chi2(4) = 2.5993 P=0.627 (not significant to the 0.05%)						

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Sample includes individuals over the age of 60 in wave 9 of Understanding Society

Outputs are not weighted

No controls added

The difference in the proportion of individuals who report high life satisfaction across family network size groups is not only smaller than the difference observed between friendship network size groups and life satisfaction, but also more heterogeneous across the household compositions sub-samples in size, directionality, and linearity. For example, there is no clear pattern in the relationship between family network size and life satisfaction among those who live with just others and there appears to be a curvilinear relationship between family network size and life satisfaction among those who live with just a partner. Individuals, among this group, with both very large non-residential family networks and very small non-residential family networks report low life satisfaction in larger numbers than those with 2-5 non-residential family members.

It is not surprising that the relationship between an individual's family network size and their life satisfaction is more complex than that between friendship network size and wellbeing. Firstly, there is great heterogeneity among individual's family networks. People hold very different relationships with their siblings, children, and great-grandchildren, for example. Arguably friendship is a more homogenous social relationship category (differences in friendship types/categories are explored in section 4.3 and in chapter 6). Moreover, subjective characterisations of what it means to be a 'friend' often necessitate a certain degree of positive affection (see section 1.4.2). For example, if a relationship was particularly fractious an individual may be unlikely to call them a friend. Yet they may still describe a similar individual as a neighbour, partner, or family member, due to the blood, legal and/or geographic bonds that define these ties. In short, the role of friendship network size on wellbeing is arguably stronger and more consistent than that of family network size. The popular adage that you can choose your friends and not your family could have an empirical basis here.

4.2.2.2.   Community Group Participation

Alongside an exploration of familial social networks, it is crucial to recognise the importance of activity in community groups and organisations. This is used as a proxy to capture community social relationships or social contact, although it is

important to note that one may be active in community organisations without interacting or building relationships with the other organisation members. There are 16 possible organisation categories listed within U-Soc that participants can report being active in: a professional organisation, a women's group, a religious organisation, a pensioners group, a scouts/guides group, a political party, a trade union, an environmental group, a parents/school association, a tenants/resident's group, a voluntary services group, a social/working men's club, a sports club, a WI/Townswomen's guild, another community group, and/or another group. The number of groups reported, is arguably therefore an indication of the diversity of their organisational activity.

Table 4.5: Cross-tabulations of Satisfaction with Life and Community Organisation Activity by Household Composition

	Life Satisfaction					
	Low Life Satisfaction		High Life Satisfaction		Total	
Full Sample						
Number of organisations active in	No.	Row %	No.	Row %	No.	Row %
0 organisations	1,255	26%	3,634	74%	4,889	100%
1 organisation	487	17%	2,463	84%	2,950	100%
2 or more organisations	363	14%	2,215	86%	2,578	100%
Total	2,105	20%	8,312	80%	10,417	100%
Pearson chi2(2) = 175.5227 P=<0.001						
Alone						
	Low Life Satisfaction		High Life Satisfaction		Total	
Number of organisations active in	No.	Row %	No.	Row %	No.	Row %
0 organisations	402	28%	1,047	72%	1,449	100%
1 organisation	141	18%	654	82%	795	100%
2 or more organisations	126	18%	581	82%	707	100%
Total	669	23%	2,282	77%	2,951	100%
Pearson chi2(2) = 41.7935 P=<0.001						
Partner Only						
	Low Life Satisfaction		High Life Satisfaction		Total	
Number of organisations active in	No.	Row %	No.	Row %	No.	Row %
0 organisations	517	22%	1,870	78%	2,387	100%
1 organisation	229	14%	1,425	86%	1,654	100%
2 or more organisations	167	11%	1,349	89%	1,516	100%
Total	913	16%	4,644	84%	5,557	100%
Pearson chi2(2) = 87.9477 P=<0.001						
Others Only						
	Low Life Satisfaction		High Life Satisfaction		Total	
Number of organisations active in	No.	Row %	No.	Row %	No.	Row %
0 organisations	138	35%	253	65%	391	100%
1 organisation	57	33%	116	67%	173	100%
2 or more organisations	20	19%	87	81%	107	100%
Total	215	32%	456	68%	671	100%
Pearson chi2(2) = 10.7225 P=<0.05						
Partner and Others						
	Low Life Satisfaction		High Life Satisfaction		Total	
Number of organisations active in	No.	Row %	No.	Row %	No.	Row %
0 organisations	198	30%	464	70%	662	100%
1 organisation	60	18%	268	82%	328	100%
2 or more organisations	50	20%	198	80%	248	100%
Total	308	25%	930	75%	1,238	100%
Pearson chi2(2) = 19.5298 P=<0.001						

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society
Outputs are not weighted
No controls added

Like the previous association between friendship network size and life satisfaction, the number of organisations an individual reports being active in also holds positive relationship with life satisfaction (see table 4.5). Greater proportions of individuals report high life satisfaction, across household composition groups, if they are active in 2 or more organisations than those who are active in no community

organisations. For the whole sample and those who live with their partner and others the size of this difference is like that observed for friendship network size and life satisfaction. For example, in the full sample there is a 21-percentage point difference in the proportion who report high life satisfaction between those with no friends and those with eleven friends. Similarly, a 20-percentage point difference is observed in the proportion of individuals reporting high life satisfaction between those active in no organisation and those active in two or more organisations.

Yet, for other household compositions there is a marked difference between a) the association between *friendship network size* and life satisfaction and b) the association between *community organisation activity* and life satisfaction. For example, when exploring individuals who live alone, a 20-percentage point difference was observed in the proportion of individuals who had high life satisfaction between those with no friends and eleven or more friends – yet in the same group only a 10-percentage point difference was observed for the proportion reporting high life satisfaction between those active in no organisations and those active in 2 or more organisations. Similarly, for individuals living with just others and individuals living with just a partner, friendship network size appears to hold a stronger bivariate association with life satisfaction than community organisation activity. This suggests that for certain household composition groups the number of friends they have holds greater value for their life satisfaction than their activity in community organisations. Despite this, the role of community organisational activity is still large and significant. Multivariate analysis in section 4.2.3, and the longitudinal analysis in chapter 5 can better disentangle the extent to which the number of friends one holds impact wellbeing through similar or different causal pathways to their membership in community organisations. Chapter Six further explores the different kinds of friendships older adults report and the multiple ways they impact wellbeing.

There is a marked difference in the 'baseline' proportions of individuals reporting high life satisfaction among those with no friends and those active in no

organisations. The proportions of individuals who report high life satisfaction amongst those not active in community organisations varies across household compositions from 65 to 78 percent, with a mean proportion of 72%. Yet the proportion of individuals who report high life satisfaction amongst those with no close friends, across household compositions varies between 52 and 70 percent with a mean of 62%. This suggests that the state of friendlessness is more detrimental to one's wellbeing than inactivity in community organisations. This is a logically intuitive finding when considering the nature of these ties, friendships are primarily bound by the quality of the interaction between two individuals and community groups often bound by an overarching and potentially more disparate group identity. Therefore, individuals may participate in a community group but have little interaction with other individuals within this group, and therefore a lack of membership in this group may not come at a significant loss. Chapter Five will explore the longitudinal impact of a change in both community organisation activity and friendship network presence on wellbeing and add significant depth to this interpretation.

To fully unpick these relationships, it is important to explore the multivariate associations between all three social network types on the odds of an individual reporting high life satisfaction with the inclusion of the following model controls, age, sex, education, tenure, employment, nationality, presence of an illness or disability and subjective health status, as section 4.2.3 will continue to do.

4.2.3. Multivariate associations between the presence and size of friendship networks on life satisfaction

Binary logistic regression models are used to understand how friendship network presence and size influence the odds of an individual having high life satisfaction. All models are weighted to account for the hierarchical clustered sampling approach in U-Soc and all coefficients are exponentiated to generate odds ratios for ease of interpretation. A stepwise approach to model building is adopted with each

variable added in turn. Variables are selected due to the theoretical or conceptual importance of each and have therefore not been omitted when these did not hold statistical significance. The justification behind the variable selection can be found in section 3.3.3, and Appendix B provides more details about the computation of each variable. The impact of the inclusion of each variable is discussed where of substantive interest. Appendix H shows how the model odds ratios change with the inclusion of each variable for the full sample. The model is then run for each sub-sample based on household composition and the odds ratios are compared across sub-samples. The multivariate results of the impact of friendship network *size* on life satisfaction are discussed first before discussions of the role of family network size and community organisation activity are examined. Section 4.2.4 summarises the results from this first section of analysis, and section 4.3 extends this into an analysis of the *nature* of friendship networks across household composition groups.

4.2.3.1.   Friendship

In general friendship presence and size is associated with increased odds of high life satisfaction however some interesting intricacies within this data are worth paying greater attention to. As identified in the bivariate results it is useful to explore the power of the single friend. The odds of high life satisfaction (full sample) are 1.7 times greater among those with 1 friend when compared to those with no close friends. Interestingly, the presence of 2-5 close friends has a smaller impact on the odds of an individual experiencing high wellbeing than the presence of a single friend. In the full sample those with 2-5 friends are only 1.4 times more likely to experience high life satisfaction than those with no friends. Yet friendship network size is still important, the odds of high life satisfaction are 2.1 times greater for those with over eleven close friends than those with no close friends (full sample). This suggests that both the presence and size of a friendship network are important for an individual's life satisfaction, but that each additional friend may not add equal additional value. The first friend may hold particularly critical importance in pulling an individual out of low wellbeing. See figure 4.1 for the predictive margins

for friendship network size on the odds of high life satisfaction by household composition.

Figure 4.1: Predictive margins of friendship network size on the odds of high life satisfaction with 95% confidence intervals, by household composition

Predictive Margins of friendship network size on the odds of high life-satisfaction with 95% CIs

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society
Outputs are weighted. Results control for age, sex, education, tenure, employment, nationality, presence of long-term illness or disease, subjective health, number of community organisations active in, and number of family members.

It is also important to highlight that the role of friendship network size on life satisfaction varies by household composition. In the bivariate analysis, among those who lived with just others, a 24-percentage point difference was observed in the proportion of individuals who reported high life satisfaction between those with no friends and those with over 11 friends. This is the largest difference within a household composition group, and perhaps suggests that for those who live with just others there is more life satisfaction to be gained through enlarging their friendship network than among those in different household composition groups. When looking at the odds of high life satisfaction for those with 6 to 10 close friends, compared to those with no close friends a similar picture to that presented in the bivariate results emerges. Those who live with just others with 6 to 10 close friends have 3.6 times greater odds of having high life satisfaction than those who have no close friends. In comparison there is an equivalent odds ratio increase of

1.8 for those living alone or with just a partner and 1.9 for those living with a partner and others.

The benchmark level of life satisfaction for those living with just others is markedly lower than the other household composition groups, suggesting that there is more potential for friends to hold a key role in bringing satisfaction to an individual's life if they live with just others. This steep gradient is clearly depicted in figure 4.1. Interestingly, these trends shift when looking at the odds of high life satisfaction among those with over 11 close friends compared with those with no close friends, it is important to note that low cell counts may have impacted these results in the number of individuals reporting over 11 close friends.

It is particularly interesting that these trends persist with the inclusion of several model controls. The models include age, subjective health status, presence of a long-term illness or disability, family network size, and community organisation activity, among other variables. One hypothesis for the variation in the impact of friendship network size on wellbeing across household compositions is due to the underlying demographics of each household composition group. The implication being that individuals are more likely to live with just others (primarily adult children) or to live on their own if they are older and/or in receipt of care. These factors may impact an individual's ability to maintain friendships and their life satisfaction separate from the impact of their household composition itself. The fact that the difference between those who live with just others and the remaining household composition groups remains with the inclusion of these health variables suggests that it may not be the health of the individuals within this household composition group that is the causal factor behind these trends. However, the stark difference in baseline predicted life satisfaction between groups evident in Figure 4.1, could explain a large amount of this variation in the impact of friendship on wellbeing between household composition groups, alternative hypotheses for these relationships are outlined in section 4.2.4.

The inclusion of community organisation activity variables slightly decreases the effect of friendship size on wellbeing. This suggests that one of the pathways with which friendship size impacts wellbeing is the same as the pathway that links generalised group activity with wellbeing. However, friendship network size is consistently positively associated with high wellbeing when controlling for both family and community network size, suggesting that friendship size may also impact wellbeing through pathways distinct to this social contact type (see table 4.6 on page 156). Feelings of belonging and positive social interactions could both be experienced during community organisation activities and an interaction with a close friend, moreover individuals may simply gain pleasure from the activities or hobbies performed within the group or between two or more friends.

4.2.3.2.   Family

Like the findings in the bivariate analysis, in the full sample non-residential family network size is not significantly associated with high life satisfaction. Yet, when these models are repeated across different household composition groups some interesting trends are observed. For those who live alone or with a partner, family network size remains insignificant. Yet for individuals living with just others, a highly significant but small ***negative*** effect is found, whereby an individual's living with just others (who had over eleven non-residential family members) are half as likely to have high wellbeing than individuals who have no non-residential family members (OR=0.5 p<0.001). Conversely, for individuals living with a partner and others a significant and ***positive*** effect is found whereby individuals with over eleven non-residential family members are 1.9 times more likely to have high life satisfaction than those with no non-residential family members, see Figure 4.2.

Figure 4.2: Predictive margins of family network size on the odds of high life satisfaction with 95% confidence intervals, by household composition

Predictive Margins of family network size on the odds of high life-satisfaction with 95% CIs

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society
Outputs are weighted. Results control for age, sex, education, tenure, employment, nationality, presence of long-term illness or disease, subjective health, number of community organisations active in, and number of close friends.

Older adults may have increased odds of having large family networks simply due to their long lifespans and the increased time this would give them to accrue children and grandchildren. However, as age is controlled for in all models, this is an unlikely explanation of the differences observed between household composition groups. Other hypotheses include the dynamics of care work prevalent in different household compositions. For example, those living with just others may have individuals living in their homes performing care-work, and therefore their non-residential familial relationships may be tainted by expectations of care-related burdens of support. Numerous other qualitative and quantitative studies have highlighted the negative effects of care-related burden on wellbeing in later life (Della Giusta et al., 2011). Whereas individuals living with a partner and others may be more likely to not yet be in the receipt of care – or to be receiving care from a partner and thus more able to hold positive relationships with their larger family networks. These narratives are speculative and further research would need to be conducted to robustly connect care-giving behaviour to the observed variation in

the relationships between family network size and wellbeing between household compositions. It is important to recognise that family social networks may contain many different types of social relationship and therefore larger family networks may also differ from smaller family networks in the nature and composition of the relationships within the network.

4.2.3.3.   Community

Alongside, a discussion comparing the relationship between family network size and friendship network size on life satisfaction. The role of community organisation activity is explored below. The marginal effects of the number of organisations an individual is active in on the odds of high life satisfaction are plotted in Figure 4.3. The number of organisations an individual is active in is significantly associated with the odds of high life satisfaction but with a smaller effect than that for friendship networks, in the full sample. For example, the odds of high life satisfaction are 1.4 times greater for those active in one organisation than those active in no organisations. Yet, being active in two or more organisations does not seem to provide considerable additional protective effects for high wellbeing.

Figure 4.3: Predictive margins of community network size on the odds of high life satisfaction with 95% confidence intervals, by household composition

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society
Outputs are weighted. Results control for age, sex, education, tenure, employment, nationality, presence of long-term illness or disease, subjective health, number of close friends, and number of family members.

Moreover, the impact of the number of organisations an individual is active in on life satisfaction is both highly variable between household compositions and variable in different ways to those observed for friendship networks. No significant relationship is found for active participation in organisations on life satisfaction for individuals who live with just others, whereas for this household composition group friendship size is significantly associated with high wellbeing. In contrast, friendship network size is only minimally associated with life satisfaction for those living with a partner and others, however, for this group the impact of community organisation activity on life satisfaction is most strong. Individuals active in one or more organisations, who live with a partner and others, have 1.5 times higher odds of experiencing high subjective wellbeing than individuals not active in any organisations (p<0.001) who live with a partner and others.

These results suggest that active membership in community organisations provides a positive impact for the subjective wellbeing of older adults but that this impact may differ depending on the individual's household composition and may operate through distinct pathways to that of friendship network size and wellbeing.

For individuals living with a partner or a partner and others activity in community organisations holds greater wellbeing importance, than it does for those living alone or with just others. One hypothesis for this is that their partner is fulfilling some of the relational needs that others may be looking for in a close friend and therefore these individuals are less reliant on close friendships but more reliant on the larger social group interactions provided by membership in a club or organisation. The benefits from these group interactions may be less easily generated within a 1:1 interaction such as that with a romantic tie. It therefore follows that those who reside with just others and those who live alone may lack a close 1:1 relationship within their household and therefore may gain more from a close friendship than from group activity.

Table 4.6: Binary logistic regression model for friendship size on the presence of high life satisfaction by household composition

	Full Sample	Alone	Partner Only	Others Only	Partner and Others
Number of Close Friends (Reference category= No close friends)					
1 Close Friend	1.721**	2.011*	1.814*	1.208	1.261
	[0.339]	[0.573]	[0.445]	[0.228]	[0.319]
2-5 Close Friends	1.405*	1.505*	1.429*	2.314***	0.921
	[0.193]	[0.300]	[0.253]	[0.270]	[0.135]
6-10 Close Friends	1.900***	1.776**	1.820**	3.608***	1.949***
	[0.279]	[0.381]	[0.341]	[0.572]	[0.327]
>=11 Close Friends	2.126***	2.495***	2.264***	1.758***	1.316
	[0.360]	[0.655]	[0.473]	[0.285]	[0.250]
Number of Non-residential Family Members (reference category = no family members)					
1 family member	1.159	1.230	1.181	0.848	1.119
	[0.198]	[0.293]	[0.286]	[0.108]	[0.215]
2-5 family members	1.115	0.977	1.219	0.721*	1.214
	[0.151]	[0.190]	[0.199]	[0.096]	[0.230]
6-10 family members	1.242	1.172	1.262	1.225*	1.315
	[0.168]	[0.219]	[0.205]	[0.113]	[0.251]
>=11 family members	1.230	1.043	1.282	0.569***	1.929**
	[0.172]	[0.208]	[0.224]	[0.069]	[0.408]
Number of Organisations Active In (reference is active in no organisations)					
Active in one organisation	1.470***	1.687***	1.336**	0.809	1.554***
	[0.115]	[0.200]	[0.127]	[0.088]	[0.151]
Active in two or more organisations	1.320**	1.151	1.386**	1.024	1.541***
	[0.125]	[0.142]	[0.155]	[0.136]	[0.158]
Age (Reference category = 60-65)					
66-70	1.120	1.248	1.100	0.980	1.069
	[0.111]	[0.196]	[0.130]	[0.132]	[0.127]
71-75	1.301*	1.610**	1.056	2.756***	1.648***
	[0.139]	[0.262]	[0.134]	[0.445]	[0.215]
76-80	1.300*	2.224***	0.954	1.506*	1.068
	[0.169]	[0.419]	[0.144]	[0.238]	[0.186]
81-85	1.636**	2.144***	1.322	7.508***	2.461*
	[0.262]	[0.427]	[0.292]	[2.160]	[0.916]
>=86	1.538*	2.258***	1.260	1.797***	0.758
	[0.287]	[0.458]	[0.347]	[0.280]	[0.115]
Sex (reference category = male)					
Female	1.019	1.086	0.937	2.216***	1.058
	[0.068]	[0.111]	[0.074]	[0.167]	[0.090]
Education (reference category = None of the Above)					
Secondary Education	0.869	0.901	0.842	1.288**	0.841
	[0.068]	[0.103]	[0.079]	[0.122]	[0.091]
Tertiary Education	1.016	1.158	0.898	1.657***	0.994
	[0.105]	[0.198]	[0.105]	[0.212]	[0.116]
Tenure (reference category = owned outright)					
Owned with Mortgage	0.777*	0.805	0.948	0.658**	0.655***
	[0.082]	[0.171]	[0.132]	[0.091]	[0.067]
Rent from Local Authority or HA+	0.819*	1.051	0.632**	2.019***	0.583***
	[0.078]	[0.126]	[0.092]	[0.210]	[0.076]
Private Rent or Other	0.773	0.987	0.646*	0.687***	0.865
	[0.126]	[0.198]	[0.139]	[0.053]	[0.076]
Employment (reference category = In employment)					
Other	0.709	0.591	0.684	0.542***	0.835
	[0.164]	[0.404]	[0.169]	[0.062]	[0.157]
Retired	1.531***	1.432*	1.879***	0.913	1.015
	[0.149]	[0.246]	[0.236]	[0.119]	[0.119]
Unemployed	1.419	1.405	3.907	0.679*	0.484***
	[0.500]	[0.480]	[3.066]	[0.100]	[0.058]
Sick or disabled	0.474***	0.610*	0.308***	0.192***	0.658

	[0.097]	[0.153]	[0.104]	[0.039]	[0.177]
Nationality (reference category = Not British Born)					
British Born	1.171	1.264	1.406*	1.068	0.770***
	[0.136]	[0.224]	[0.205]	[0.106]	[0.057]
Long-standing illness or Disability (reference category = Yes)					
No	1.208*	1.654***	1.112	0.964	0.960
	[0.100]	[0.203]	[0.109]	[0.133]	[0.092]
Subjective Health Status (reference category = Fair/Poor)					
Good	2.957***	2.531***	3.033***	5.839***	3.195***
	[0.253]	[0.304]	[0.314]	[0.689]	[0.323]
Excellent/very good	4.782***	4.176***	4.829***	7.174***	5.626***
	[0.496]	[0.672]	[0.602]	[0.948]	[0.606]
N	8656	2255	4500	477	932

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society
Outputs are weighted. Exponentiated Coefficients. Standard errors in brackets. + Housing Association. *** p<0.001, ** p<0.01, * p<0.05

4.2.3.4.   Interaction Effects between Social Contact Types

Existing literature has suggested that the role of one type of social contact on an individual's subjective wellbeing is intrinsically connected to the role of another type of social contact (see chapter two). It is this premise – the power of network effects – that has led to the prominence of social network analysis in recent academic work. The role of the presence and size of each of the three social network types on wellbeing has been explored in this chapter whilst controlling for the presence and size of the other two social network types to account for these inter-relationships. Appendix H shows how these vary as each is included in the model in a stepwise fashion. The inclusion of family network size made little difference to the odds ratios of friendship network size on wellbeing, however, the inclusion of community organisation activity does marginally reduce the effect of friendship, despite both variables retaining their significance. To further examine the ways that the role of an individual's friendship network on their life satisfaction may be contingent on their family or community activity, analysis employing interaction effects between these variables were conducted. For ease of interpretation these were simplified to binary predictors as follows: has friends/does not have friends, has family/does not have family, is active in organisations/is not active in organisations. The interaction effects in these models are insignificant, suggesting that the role of each of these social networks on life

satisfaction is not highly contingent on the other. The next section continues to discuss the relationships observed between the model controls (age, sex, education, tenure, employment, nationality, presence of a longstanding illness or disease and subjective health status) and wellbeing.

4.2.3.5.   Control variables

A small significant association is observed between age and life satisfaction. Individuals between the ages of 81 and 85 have higher odds of high life satisfaction than individuals between the ages of 60 and 65, when holding all other variables constant (this was the largest effect of all age-based categories at the 95% level with an odds ratio of 1.63). Interestingly, age held greater significance in the model for individuals living alone and those living with just others, than those living with a partner. This suggests, for example, that living alone in one's sixties has a different impact on one's life satisfaction than living alone in one's 90s.

Education and sex are both insignificant predictors of life satisfaction in the full model.

A small effect is observed between tenure and life satisfaction, whereby individuals who have a mortgage or rent from a local authority or housing association have lower odds of high-life satisfaction than individuals who own their home out right (p<0.05).

Individuals who are retired are significantly more likely to have high life satisfaction than those in employment, and conversely those who are out of work are significantly less likely to have high life satisfaction than those in employment.

In the full model, being British born is an insignificant predictor of high life satisfaction, however in certain household compositions this variable gains significance. Among those who live with a partner and others, those who are British born are significantly less likely to report high wellbeing than those who are not

British born. In contrast, amongst those who live with just a partner, the British Born are significantly more likely to report high wellbeing than those who are not British born. This may indicate underlying cultural preferences towards household and family structures. This suggests that a two-person household with a romantic partner could be the preferred household structure for those who are British born.

Those with excellent/very good subjective health have 4.7 times higher odds of reporting high life satisfaction ($p<0.001$ OR=4.782). This was the largest effect observed within the model and is likely due both to the large impact that one's health has on their wellbeing, but also because both measures are subjective self-assessments. Thus, potentially capturing underlying personality traits such as optimism or cynicism. Similarly, individuals without an illness or disability have higher odds of having high life satisfaction, however this is a much smaller effect and only marginally significant ($p<0.05$ OR=1.2). Full bivariate analysis and discussion of the impact of the control variables used in this model on life satisfaction can be found in Appendix C.

4.2.4. Summary

The aims of the research in this section (4.2) are to, firstly, understand how the presence and size of an older adults (60+) friendship networks are associated with their wellbeing. Secondly, to understand how this differs from the relationship between family social network size and community organisation activity on wellbeing. The section also sought to understand how the relationships between friendship, family and community organisation activity and an individual's life satisfaction differ by the household composition that the individual resides in. Several central findings have emerged from this analysis.

Firstly, individuals in different household compositions have different sized friendship networks. Those who live with a partner have larger friendship networks, and those who live with just others have smaller friendship networks, with

individuals living alone and individuals living with a partner and others falling in the middle.

Secondly, having larger friendship networks is associated with higher odds of being satisfied with life, consistent across household composition groups.

Thirdly, the impact of the ***presence*** of a friendship network is greater than that of friendship network ***size*** on an individual's odds of high wellbeing. Suggesting that a transition out of friendlessness may provide larger wellbeing benefits, than those provided by the friends gained thereafter. This is explored using longitudinal data in chapter five.

Fourthly, friendship networks are more strongly associated with high wellbeing than family networks or activity in community organisations. The size of one's non-residential family network is not a significant predictor of their wellbeing. Community organisation activity is significantly associated with high wellbeing but holds a smaller effect size than friendship network size.

Fifthly, the relationship between the size of an individual's friendship network and their wellbeing differs between household composition groups. The strongest associations are observed for individuals who live alone and individuals that live with just others. Whereas those who live with a partner and a partner and others see the presence of a friendship network resulting in smaller odds of high wellbeing.

This analysis raises several further questions about the nature of older adult's friendship networks and their wellbeing in later life. As we have seen, the role of social network size on life satisfaction is variable by household composition but not contingent on the presence of other non-residential social contact types. This may suggest that there is something unique about the nature of friendship that has a particular impact on wellbeing, and that this may vary between household composition groups. What this is exactly is unclear. There is neither sufficient data

nor sufficient scope within this thesis to explore the many possible mechanisms in which one's friendship network may impact their wellbeing. Yet, it is possible to gain further understanding of whether and how the nature of older adult's friendship networks differs across household composition groups. This is what section 4.3 will aim to do. Due to low cell counts only bivariate analyses are included. The extent to which the nature of an older adult's friendships may impact their wellbeing across household groups should be the subject of future research.

4.3.   Friendship Network Nature, Household Composition and Life satisfaction

The findings from the first stage of analysis (section 4.2) have demonstrated that for this sample (representative of older adults ageing in place in the United Kingdom) having one or more friends is associated with high wellbeing. Moreover, these results demonstrate that there are differences in the relationship between friendship network size and wellbeing between household composition groups. There is strong argument that a good deal of this variation is attributable to differing baseline wellbeing levels. However, other hypotheses exist that suggest this variation can be attributed to the nature of the friendships formed by individuals in these different household compositions. These hypotheses are outlined further below.

Our understanding of friendship (see section 2.3) includes a recognition that it is a subjective social form. One individual's description of a friend that is good for their wellbeing may be different to another individual's. This raises a question about whether there are essential friendship features that universally boost wellbeing across individuals. Or, alternatively, if it is the presence of a friendship network that is a good 'match' for an individual's specific social needs that is of greatest wellbeing benefit. This research has observed a difference in the relationship between friendship network size and wellbeing across household compositions. Yet, it is unclear if this is pattern is because an individual's household composition impacts the nature of the friendships they form, with some friendship networks

being more effective at boosting wellbeing than others. Or if one's household composition impacts the friends they desire, meaning that two identical friendship networks could have a different impact on one's wellbeing.

This section (4.3) will continue to seek to shed light on the nature of friendship in later life and the ways that it varies by household composition. Although this section will not be able to directly answer which of these above hypotheses is most accurate (further research should be conducted to pick this apart) it will be able to answer a related research question. Do individuals in different household compositions hold friendship networks that are different in nature to one another, exploring: proximity, homophily, size, frequency of interaction, and multiplexity (Table 4.7). By doing so, the section aims to gain further insight into the differences in the impact of friendship on wellbeing for individual in different household compositions.

The friendship network attribute variables selected do not represent an exhaustive list of friendship dynamics, and further variables, particularly those that better capture relationship quality, should be used in future research, data allowing. These were selected as the represented the full choice of friendship attributes collected in Understand Society. This analysis will use data from Understanding Society Wave 9, (also used in the analysis in section 4.2) however, the sample is restricted to older adults (60+) who report holding at least one close friend.

Table 4.7: Friendship Network Variables

| | Social Network Attributes | | | |
	1) Frequency/ nature of interaction	2) Homophily	3) Multiplexity	4) Geographic Proximity
Friendship	The number of hours an ego spends chatting or interacting with friends through social web-sites on a normal week?	The proportion of an ego's close friends who are similar to themselves in terms of ethnic group, income, age, and education.	The proportion of an ego's friends who are also family members.	The proportion of an ego's closest friends who live in their local area.

Source: Author's creation

4.3.1. Frequency/Nature of Interaction

Previous research has found that frequency of interaction (Phongsavan et al., 2013), and mode of interaction (Griggs et al., 2021) are both important variables in the association between friendship and wellbeing. Use of the internet and digital communication methods continue to expand among older adults. Recent data suggests that the proportion of individuals over the age of 75 who are recent users of the internal has nearly doubled between 2013 and 2020, from 29% to 54% (Office for National Statistics (ONS), 2021d). However, data suggests that use of digital communication technologies still vary by age, and a 'digital divide' exists with older adults less likely to communicate online (Ofcom, 2022; Office for National Statistics (ONS), 2019c). This sub-section will explore the number of older adults who report belonging to a social website and how frequently they communicate with their friends on these social websites, by household composition group.

Seventy-one percent of participants report not belonging to a social website. For those who live alone this is even higher at 78% and for those who live with a partner and others slightly lower at 66% (see table 4.10). Of those who report belonging to a social network website, the length of time they report spending online interacting with friends is low. Only 7% of individuals report speaking to friends on social websites for more than one hour a week, and this is relatively consistent across household composition groups. There could be many reasons for this, including but not limited to a lack of digital literacy, a lack of access to ICTs and/or a lack of desire, awareness, or ability to communicate with friends on these platforms. Ofcom predict that in 2022 73% of individuals over the age of 65 use the internet at home suggesting that there are further barriers beyond internet accessibility that inhibit engagement in remote communication with friends on social websites (Ofcom, 2022). Use of remote communication tools is highlighted tangentially in the qualitative research on friendship in COVID presented in chapter six. Here, issues such as a lack of need, a lack of ability and a lack of desire are all discussed by participants as reasons for not adopting digital communication methods to stay in touch with their friends during the COVID-19 pandemic.

Table 4.8: Cross-tabulation of the number of hours an individual spends interacting with friends through social websites by household composition

Number of hours spent interacting with friends through social websites	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Does not belong to a social website	2,465	78%	3,941	68%	573	74%	877	66%	7,856	71%
0 hours pw	103	3%	286	15%	35	5%	90	7%	514	5%
Less than an hour pw	413	13%	1,155	20%	112	15%	262	20%	1,942	18%
1-3 hours pw	172	5%	360	6%	41	5%	86	6%	659	6%
4 or more hours pw	20	1%	64	1%	12	2%	23	2%	119	1%
Total	3,173	100%	5,806	100%	773	100%	1,338	100%	11,090	100%
Pearson chi2(9) = 125.8652 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted, no controls added.

Although smaller proportions of those who live with a partner or a partner and others (the two youngest household composition groups) report not belonging to a social website than those who live alone or with just others, the differences between these household composition groups largely disappears when examining the proportions that report spending longer periods of time interacting with friends on social websites. There is, for example very little difference in the proportion reporting spending 4 or more hours per week interacting with friends on social websites across household composition groups (alone = 1%, partner = 1%, others = 2%, partner and others = 2%).

4.3.2. Homophily

This sub-section will continue to explore whether the older adults in four different household composition groups report having friends that are more, or less, like themselves in terms of age, ethnic group, education, and income.

4.3.2.1.   Age Homophily

As Table 4.9 demonstrates, 41% of individuals report that all their friends are of a similar age to themselves. Suggesting that for many older adults their friendship networks are primarily comprised of their peers. If having a friendship group of the

same age as oneself is important for wellbeing, then it is plausible that as an individual continues to live past the average life-expectancy they could find it more difficult to gain and sustain friendships beneficial to their wellbeing. Interestingly, these findings vary according by household composition. Fourteen percent of those who lived alone reported that less than half of their friends were the same age as themselves, and 39% reported they were all similar. In contrast, only 6% of individuals who lived with a partner reported that less than half of their friends were the same age as them and 42% reported that all their friends were of a similar age to themselves. Therefore, individuals living alone and individuals living with just others tend to have more diverse friendship networks in terms of age, than those living with a partner or a partner and others.

Table 4.9: Cross-tabulations of the proportion of an individual' friendship network of a similar age to themselves by household composition

Proportion of individual's friends who are a similar age to themselves	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Less than half	398	14%	354	6%	88	13%	120	10%	960	9%
About half	450	15%	794	14%	119	18%	206	17%	1,569	15%
More than half	955	32%	2,051	37%	196	29%	443	35%	3,645	35%
All similar	1,147	39%	2,304	42%	278	41%	483	39%	4,212	41%
Total	2,950	100%	5,503	100%	681	100%	1,252	100%	10,386	100%
Pearson chi2(9) = 147.5121 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted, no controls added.

4.3.2.2.   Ethnic Homophily

There is relatively little diversity in the ethnicity of the friendship networks that older adults report. Across household compositions more than half (66%) of respondents' report that all their friends are of the same ethnic group as themselves. According to the latest statistics (2020) on ethnic diversity in the wider UK population smaller proportions of adults over the age of 60 belong to an ethnic minority group than other younger cohorts (Office for National Statistics (ONS), 2023a). Although, it is important to note that there is data to suggest that this is increasing and older adults in the UK are becoming a more ethnically diverse group

(*ibid*). Based on the combined findings that many older adults have friendship groups primarily comprised of their peers (see above) and that there is less ethnic diversity among older adults in the UK than other younger cohorts, it is a logical finding that older adults have largely homogenous friendship networks.

There is some marginal evidence that individuals who live with a partner and others may have slightly more ethnically diverse friendship networks than those in other household compositions, with only 57% of the individuals in this group reporting that all their friends are of a similar ethnic group to themselves in contrast to 68% of those who live alone, or with a partner and 63% of those who live with just others.

Table 4.10: Cross-tabulations of the proportion of an individual's friendship network of the same ethnic group to them by household composition

Proportion of individual's friends who are of the same ethnic group as themselves	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Less than half	175	6%	243	4%	47	7%	72	6%	537	5%
About half	135	5%	157	3%	48	7%	88	7%	428	4%
More than half	622	21%	1,386	25%	155	23%	372	30%	2,535	24%
All similar	2,008	68%	3,721	68%	430	63%	718	57%	6,877	66%
Total	2,940	100%	5,507	100%	680	100%	1,250	100%	10,377	100%
Pearson chi2(9) = 125.8652 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted, no controls added.

4.3.2.3.   Education Homophily

When exploring the educational homophily of older adults' friendship networks there is little notable difference between individuals in each of the four household compositions. This is perhaps unsurprising as this cohort is likely to have experienced their early educational years prior to the expansion of the British higher education system. Arguably, this generates fewer educational options for older adults and therefore less diversity in educational outcomes in later life. Thirty-eight percent of the sample report having no education at all, and a further 41% report only having secondary school level education, perhaps supporting this

premise that there may be a lack of educational diversity in general among older adults of this generation. This argument is of course predicated on the idea that older adults primarily have friendship networks comprised of their peers, which appears to hold credence when looking at the data in Table 4.11.

Table 4.11: Cross-tabulations of the proportion of an individual's friendship network with a similar education level to themselves by household composition

Proportion of individual's friends with a similar education level to themselves	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Less than half	228	8%	286	5%	54	8%	105	9%	673	7%
About half	408	15%	786	15%	116	18%	202	17%	1,512	15%
More than half	827	30%	1,787	33%	178	28%	394	33%	3,186	32%
All similar	1,307	47%	2,523	47%	296	46%	507	42%	4,633	46%
Total	2,770	100%	5,382	100%	644	100%	1,208	100%	10,004	100%
Pearson chi2(9) = 57.8190 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted, no controls added.

4.3.2.4.   Income Homophily

In a similar vein to educational homophily, there is little observable difference between household composition groups in the proportion reporting that more or less of their friendship network has a similar income to themselves. Roughly even proportions of individuals report having less than half, about half, more than half and all their friends from a similar income to themselves. A finding relatively consistent across household composition groups.

Table 4.12: Cross-tabulations of the proportion of an individual's friendship network with a similar income by Household Composition

Proportion of individual's friends with a similar income to themselves	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Less than half	559	26%	849	19%	134	27%	207	20%	1,749	22%
About half	581	27%	1,293	29%	149	30%	301	29%	2,324	29%
More than half	516	24%	1,326	30%	115	23%	300	29%	2,257	28%
All similar	506	23%	940	21%	98	20%	215	21%	1,759	22%
Total	2,162	100%	4,408	100%	496	100%	1,023	100%	8,089	100%
Pearson chi2(9) = 69.5622 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted, no controls added.

4.3.3. Multiplexity

As summarised in Chapter Two, there is a wealth of research supporting the idea that older adult's social networks become increasingly more family oriented as individual's age (Cumming and Henry, 1961). As the findings in section 4.2 highlight, friendship ties and familial ties may impact wellbeing in later life in different ways and through different mechanisms. However, these are not discrete social network domains, and many individuals may, in fact, may classify their family as friends and vice versa. The extent to which individuals in one's social network occupy multiple domain roles simultaneously is referred to as social network multiplexity. This sub-section will explore if the proportion of individuals reporting that their friends are family members differs across household composition groups.

The majority (52%) of individuals report that less than half of their friends are also family members. Some variation between household composition groups can be identified. Fifteen percent of those who live with just others, for example, report that all their friends are family members. This is seven percentage points higher than the proportion of individuals living with a partner (8%), five percentage points higher than those living with a partner and others (10%) and 4 percentage points higher than those who live alone (11%). One hypothesis for the finding that greater proportions of individuals who live with just others report that all of their friends are family members is that these 'others' are in fact family members. These individuals may describe their family members as friends, due to the closeness in these relationships, formed through their cohabitation.

Notably, around 10% of all individuals report that all their friends are family members. This suggests that the observed impact of family size on wellbeing (in section 4.2) may have been under–represented due to this additional classification of family members as friends by participants. The above research is predicated on the assumption that participants would have recorded friendships with family members as both family members and friends, however, is it not possible to determine if this is the case from the survey information provided.

Table 4.13: Cross-tabulation of the proportion of an individual's friends who are also family members by Household Composition

Proportion of individual's friends who are also family members	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Less than half	1,206	51%	2,557	53%	267	47%	559	52%	4,589	52%
About half	530	23%	1,096	23%	125	22%	235	22%	1,986	23%
More than half	353	15%	762	16%	89	16%	175	16%	1,379	16%
All similar	263	11%	379	8%	84	15%	107	10%	833	10%
Total	2,352	100%	4,794	100%	565	100%	1,076	100%	8,787	100%
Pearson chi2(9) = 43.0230 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted, no controls added.

4.3.4. Geographic Proximity

Propinquity is a foundational feature of a friendship and has been found to be a key variable in the impact that one's friends have on their wellbeing (Van der Pers et al., 2015). It may require less emotional energy, and less organisation or physical labour to frequently interact with someone who is geographically close. As frequency of interaction is connected to emotional closeness and relationship maintenance, geographic closeness can also be considered a key variable in friendship maintenance. The rise of remote communications technologies may challenge the importance of friendship propinquity (Harper et al., 2020). Despite this, individuals who are geographically close can interact in ways that cannot be replicated online. For example, geographically proximal friends may be more readily available to respond to time-sensitive action-based support requests (Small and Adler, 2019).

However, it is possible for strong relationships to be built across substantial geographic distance. Georg Simmel coined the concepts of physical and social distance to explain social dynamics (Simmel, 2009). Here, physical distance (the amount of actual geographic space between two individuals) pulls two individuals apart, and social distance (the degree of intimacy or similarity within a relationship)

draws two individuals back together again. Research by Nahemow and Lawton (1975) found an inverse relationship between age/ethnic similarity and proximity of residence (Nahemow and Lawton, 1975). Here intergenerational relationships were exclusively identified in geographically proximal relationships. Research by Sun and Schafer (2022) explored the typical geographic layouts for the core discussion networks of Europeans aged over 50 in the Survey of Health, Ageing and Retirement in Europe (SHARE). They identified that older adults across held geographically diverse relationships and that although geographic diversity was associated with frequency of contact it was not associated with emotional closeness or overall satisfaction with their network.

This section will, continue to explore whether there are observable differences in the proportion of an individual's friendship network that live within their local area between household composition groups.

Fifty percent of individuals who live with just others report that either more than half or all their friends live in their local area, this is a smaller proportion than the 56%, 57% and 54% of those who live alone with just a partner and with a partner and others respectively (see table 4.16). Similarly, larger proportions of those who live with just others report that less than half or none of their friends live in their local area (32%) than any other household composition. These may be individuals who have moved away from their geographically situated friendship networks to move in with adult children, for example. It may shed further light on the small friendship network sizes prevalent in this household group and the importance these have for the subjective wellbeing of the individuals in this group (see section 4.2).

Table 4.14: Cross-tabulation of the proportion of one's friends who live in their local area by household composition

Proportion of individual's friends who are living in their local area	Household Composition									
	Alone		Partner Only		Others Only		Partner and Others		Total	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Less than half	779	26%	1,322	24%	216	32%	353	28%	2,670	26%
About half	520	18%	1,088	20%	127	19%	218	17%	1,953	19%
More than half	965	33%	2,122	39%	195	29%	455	36%	3,737	36%
All are in local area	688	23%	978	18%	145	21%	226	18%	2,037	20%
Total	2,952	100%	5,510	100%	683	100%	1,252	100%	10,397	100%
Pearson chi2(9) = 87.3319 P=<0.001										

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted, no controls added.

4.3.5. Summary

Of all the household composition groups, those who lived with just others reported having familial friendship networks and geographically distant friendship networks in the largest proportions. Alongside those who live alone, they also reported belonging to a social website in lower proportions and reported having friendship networks that are less like themselves in age than those living with just a partner and those living with a partner and others. In contrast, higher proportions of those who live with a partner and a partner and others tended to report friendship networks that are 'age-based peers', which are not familial, and are geographically local. These trends instinctively make sense together and fit the age profile of the household composition groups.

There is some evidence to suggest there is a familiarisation of individual's social networks as they age, as the two household composition groups with the highest average age (those who live alone and those who live with just others) both reported having familial friendship networks and friendship networks not of their age in the highest proportions. Those who lived with just others, also reported having the most geographically distal friendship networks.

As these are simply cross-sectional bivariate statistics it is possible that these trends are not a factor of age but of other underlying variables. For example, patterns of

caring behaviour, family structure, cultural/ethnic group, and/or geographic location may more frequently occur in certain household composition groups etc. Arguably, there is sufficient difference in the types of friends that older adults report having across the household composition groups to posit that a certain degree of the difference seen in section 4.2 between the impact of friendship on wellbeing between individuals in different household composition groups may be due to the underlying nature of the friendships these individuals tend to hold. Further research using multivariate models and more detail friendship attribute variables should be conducted to further explore this.

4.4.   Conclusion

This chapter explored the cross-sectional relationship between older adult's (60+) friendship networks and their subjective wellbeing (life satisfaction), and how this varies depending on their household composition. This analysis was comprised of two parts, the first was an investigation of the role of the size and presence of friendship networks on wellbeing by household composition. This included comparisons with the role of non-residential family network size and community organisation activity on wellbeing. The second, was an investigation of the extent to which the homophily, multiplexity, nature of interaction and proximity of an older adult's friendship network varied between household composition groups. A summary of the results across both parts of the analysis have been provided below, exploring each household composition in turn, before a discussion of the implications and limitations of this research are outlined.

4.4.1. Living Alone

Older adults living alone, report having average sized friendship networks. The presence and size of their friendship networks are significantly associated with their odds of high life satisfaction. More than any other household composition groups the presence of a single friend has strongest effect on those living alone (OR = 2.0,

p<0.05) and individuals with over 11 close friends living alone have 2.5 times increased odds of being satisfied with life than older adults living alone with no close friends. Family social network size is not significantly associated with life satisfaction and being active in a single organisation holds a marginal positive effect on the odds of high wellbeing among those living alone (OR 1.7 p<0.001). Like those living with just others, individuals living alone tend to have fewer friends of the same age and/or income as them than those living with a partner and/or partner and others, but not necessarily more familial friendship networks. Individuals living alone have the most highly localised friendship networks with 23% reporting that all their friends live in their local area.

4.4.2. Living with Just a Partner

Older adults living with just a romantic partner report having the largest friendship networks of any household composition group with 12% holding over 11 close friends, and only 5% reporting no close friends. The presence and size of these friendship networks are significantly and positively associated with the odds of high life satisfaction. Those with over 11 close friends have a 2.3 times increased chance of high wellbeing than those with no close friends (p<0.001), this is a smaller effect than for individuals living alone but bigger than for individuals living with just others and a partner and others. Like those living alone, family network size holds no significant association with life satisfaction and participation in community activities holds only a marginally positive significant association (OR 1.4 p<0.01) with life satisfaction. Proportionately larger numbers of individuals living with a partner have friendship networks of the same age as them than other household composition groups. Only 6% of those living with a partner report that less than half of their friends are of a similar age as themselves. This household composition group also reports having friends of a similar income to themselves in the largest numbers, and report that their friends were all family members in the lowest numbers (8%). Older adults living with a partner report having more geographical

disparate friendship networks than those living alone with 18 rather than 23 per cent of individuals reporting that all their friends lived in their local area.

4.4.3. Living with Just Others

The older adults who live with one or more individuals who are not their partner (those living with just others) have smaller friendship networks than any other group. Twelve percent report having no close friends, five percentage points higher than the next household composition group. Older adults living with just others also report having large friendship networks in smaller proportions than any other household composition group. Although these friendship networks are small - they are mighty, with the association between friendship network size and wellbeing being particularly large for this group. Individuals living with just others, who have 6-10 close friends have 3.6 times increased odds of being satisfied with life than individuals living with just others who have no close friends. Unlike, individuals living alone, or with a partner the presence and size of a large non-residential family network is marginally negatively associated with the odds of high life satisfaction, and active participation in a community organisation is not significant. Following on from this observed negative relationship between non-residential family network size and wellbeing, greater proportions of individuals living with just others have friendship networks that are highly familial with 15% reporting that all their friends were family. Suggesting that perhaps those who live with just others understand or define friendship and familial status slightly differently to those in other groups. Older adults living with just others also report having geographically local and geographically disparate friendship networks in larger proportions than any other household composition group.

4.4.4. Living with a Partner and Others

The older adults who reported living with a partner and other individuals generated some quite different trends in their friendship networks and their association with

their wellbeing, to the other household composition groups. For example, despite reporting similarly sized friendship networks to those living alone, friendship network presence and size holds the smallest association on this group's subjective wellbeing of any household composition group (this only holds significance for individuals with 6-10 close friends (OR 1.9, p<0.001)). Moreover, individuals living with a partner and others were the only group with which non-residential family network size held a small but significant positive association with life satisfaction, at the 99% confidence level. Among this group active membership in a community organisation is particularly strongly associated with the odds of high wellbeing (OR1.5, p<0.001). Individuals living with a partner and others, who have at least one close friend, report having educationally diverse friendship networks in the largest proportions with 9% reporting that less than half of their friendship networks have the same education to themselves. This household composition group are also most likely to report geographically distal friendship networks. Eighteen per cent of older adults living with a partner and others reported that all their friends lived in their local area, this was the same as individuals living with just a partner and marginally smaller than the other two household composition groups.

4.4.5. Next Steps

These results, help us to shed light on the role of friendship networks for high wellbeing in later life. They can help us to understand that people in different household compositions have on average different sized friendship networks, and that these hold differing levels of importance for the subjective wellbeing of the individual between household composition groups. They also help to highlight that in general the larger one's friendship network the better and that a single friend can hold considerable power in boosting an individual's life satisfaction. These results show that the role of a friendship networks on one's wellbeing is mostly independent from the role of their family social networks and community social networks, and that these relationships also vary between household compositions. These results also highlight that friendship is varied and that different groups of older adults (individuals in different household compositions) may hold different

types of friends. Yet, questions remain about whether this indicates that a) there a universally 'good' friendship features (i.e., one's that contributes to high wellbeing) and that different older adults will have achieved this to varying degrees due to differing barriers and facilitators to friendship maintenance or b) whether 'good' fundamentally looks different for different older adults and thus they are seeking different friendships entirely. Chapter 6 can extend this analysis with an understanding of the ways that older adults themselves articulate and understand different friendship types and the impact they have on wellbeing.

This chapter cannot answer important questions about how an older adult's friendship networks may change with time, change as an individual transitions between household composition groups or change between cohort or period groups. Many of these questions are beyond the scope of this thesis, however, the next chapter (chapter 5) can contribute to some of these by using longitudinal data to explore within individual change.

Chapter five will continue to explore:
- Frequencies of change across a six-year observation period, including
    - Transitions form low to high wellbeing
    - Transitions from none to one or more close friends
    - Transitions from none to one or more family members
    - Transitions out of community organisation inactivity
    - Transitions into bereavement, retirement and living alone
    - Changes in health
- The association between a transition out of friendlessness on the odds of transitioning from low to high wellbeing (section 5.3). This is achieved using conditional fixed effects logit models.

5. Study Two Results: A Longitudinal Exploration of Transitions out of Friendlessness and Subjective Wellbeing Change

5.1. Introduction

This is the second of three results chapters looking at the overall thesis topic of friendship, friendship network change and subjective wellbeing in later life. The aims of this study are, firstly, to observe the changes in older adults' friendship networks, family networks and community organisation activity levels across a six-year period (see section 5.2). Secondly, to explore the impact of gaining one's first friend on their odds of transitioning from low to high subjective wellbeing (see section 5.3). The research approach and questions are outlined in section 5.1.1.

Both the body of existing academic literature and the findings in study one (see chapter four) highlight the important role that friendships have on the subjective wellbeing of older adults (Cable et al., 2013; Fuller-Iglesias, 2015; Phongsavan et al., 2013; Rafnsson et al., 2015; Van der Pers et al., 2015). We also know that people's friendship networks have traditionally been subject to change in later life. Overall social networks have been found to reduce in size and frequency of contact (Cornwell et al., 2008; English and Carstensen, 2014; Kalmijn, 2012; Phongsavan et al., 2013; Smith et al., 2014). Family relationships have also been found to occupy a larger portion of these social networks as older adults age (Sander et al., 2017; Shaw et al., 2007; Wrzus et al., 2013). Yet, we also know that demographic, social, and cultural changes, suggest that friendships may be of increasing importance in later life than before (Baeriswyl and Oris, 2022; Carr and Utz, 2020; Fiori et al., 2020). Less research has explored the impact of these changes on the subjective wellbeing of older adults. To contribute to these debates, this study aims to understand if transitions out of friendlessness are associated with improvements in an individual's subjective wellbeing.

Study One highlighted that the first friend an individual gained had a greater impact on their wellbeing than any other friend thereafter. As a result, this study focusses on the wellbeing impact of a transition out of friendlessness, or a transition from no close friends to having one or more friends. Future research should consider looking at: the impact of transitioning into friendlessness; the impact of changes in friendship network size; and the impact of changes to friendship network features; on individual wellbeing.

This study has several limitations. It is important to note that a lack of friendships is not indicative of an individual's wider social network, for example an individual with no friends may also have a large family network, have a romantic partner, and therefore may or may not be isolated or lonely (see section 1.4.3). To highlight this, the term 'friendless' is used throughout this chapter, rather than the terms 'isolated' or 'alone'. Variables that capture whether an individual reports having one or more family members and reports being an active member of one or more community organisations are explored in the bivariate analysis in section 5.2 and are included in the multivariate models in section 5.3. To retain sufficiently large analytical samples, the analysis is not repeated across household composition sub-samples as is seen in Study One. Instead, a dichotomous variable that indicates if an individual lives on their own or not is included as a control in the multivariate models. Future research should be conducted to explore differences in friendship network change within household composition groups and the dynamics of friendship network change as individuals transition between household composition groups. The multivariate models control for transitions into bereavement, transitions into retirement, the development of a longstanding illness or disability, and improvements in one's subjective health status. Frequencies for these change variables are provided in section 5.2.

5.1.1. Research Approach

Aim: To explore how older adult's (60+) friendship networks change over time, and the impact of this on individual subjective wellbeing.

Research Questions:

> 1) What proportion of older adults in this sample report transitioning into or out of friendlessness across a six-year observation period?
>
> 1a) How does observed friendship network change compare to family and or community social network change?
>
> 2) Is a transition out of friendlessness associated with a change in life satisfaction across a six-year observation period?

Method:

> Conditional fixed and random effects logistic regression models

Data:

> Wave 9 and wave 3 of UKHLS: Understanding Society, analysis run on both a full sample and a sample with only those who have aged in place (not relocated LSOA within the observation period).

Dependent Variables:

> Wellbeing (binary Life satisfaction measure)

Independent Variables:

> Transition out of friendlessness (binary)

Control Variables:

> Transition into bereavement, transition into retirement, development of a longstanding illness or disability, subjective health change improvement, activity in one or more community organisation, presence of family network

The analysis in this study uses data from the survey responses in wave 3 (Jan 2011 – Jun 2013) and wave 9 (Jan 2017 – Jun 2019) of the UK Household Longitudinal Survey (U-Soc). This data is utilised to measure within individual change across a six-year observation window. Unlike the analysis in study one (results presented in chapter four), the use of longitudinal data in this chapter allows for a more robust estimate of causal inference of the impact of friendship on wellbeing. Fixed effects models, by design, control for between-individual differences. This means that the models adopted capture changes in the dependent and independent variables within individuals across time. One of the benefits of this approach is that unobservable or unmeasurable characteristics can be controlled for (Allison, Paul, 2009). This is one of the best ways to test causal inference with non-experimental data (*ibid*). One limitation of this approach, however, is the inability to estimate the effects of variables that do not change over time. The primary variables of interest in this study are variables that change across time; therefore, a fixed effects model is the approach of choice. Random effects models are presented alongside these to provide analytical depth, comparisons between the results of the two models are discussed in section 5.3.

No social phenomena are entirely time variant nor invariant. It is therefore necessary to make a judgement call about the amount of observed within-individual change in each dataset and whether a certain variable of interest is best classified as time variant or invariant. The following variables, although controlled for in the first study, are categorised as time invariant and are not included in the fixed effects models: sex, nationality, tenure, age, and education. As previously outlined, the analysis in this study does control for transitions into bereavement, retirement, and changes in health status, alongside changes to the presence of a family network and active involvement in one or more community organisations. Transitions into bereavement and retirement are selected for inclusion as these are the most populous categories of change observed in the marital status and employment status variables from Study One. Other transitions are not sufficiently populous to warrant model inclusion.

This analysis is conducted for two sub-samples. The first sub-sample includes all individuals who responded to both surveys and are over the age of 60 at time point one (see section 3.4.2). The results of this model are the most comparable with the results presented in Study One. The second sub-sample excludes all individuals who reported living in two different Lower Super Output Areas at the two observation points. The hypothesis is that a neighbourhood relocation would significantly disrupt an individual's available social networks and impact their wellbeing environment, thus making 'ageing in place' a useful variable to control for in this analysis (see section 1.4.7).

This study observes change using data at two time points, six years apart. A lack of information about the events in between these observation points is a limitation of the study. Adaption processes have been found to moderate the impact of an event or transition on one's wellbeing (Brickman et al., 1978; Brickman and Campbell, 1971). Therefore, long-term wellbeing stability may not indicate a total lack of wellbeing impact following friendship loss. The wellbeing impact may simply have had a more immediate impact with individual recovering back to a baseline within the six-year period. This is a limitation across all variables as an individual may have experienced a transition and then a reversal of this transition within the observation window. For example, Individuals recorded as experiencing no change in their friendship network may in fact have had friends at both timepoint one and two but a period of friendship loss in between. See section 3.4 for a discussion of the methods (see Appendix K for justification of the selection of a six-year observation window).

5.2. Frequencies for Model Variables

This section (5.2) presents the change frequencies for all variables included in the conditional logit models in this study. This section aims to address the first two study research questions. These questions ask what proportion of older adult's report transitioning into and out of friendlessness across a six-year observation

period, and how observed friendship network change compares to family and or community organisation activity change. All tables in this section are colour coded. Yellow indicates the frequencies for those who have not changed across the observation period, green indicates the frequencies for those reporting a change hypothesised to be associated with a transition towards high wellbeing and orange indicating the frequencies for those reporting a transition hypothesised to be negatively associated with a transition to high wellbeing.

5.2.1. Change in Wellbeing and Friendlessness

Similar numbers of individuals report a reduction in their wellbeing (663) as those who report an increase in their wellbeing (717), see Table 5.1. Likewise, similar number of respondents transition into (184) and out of (228) friendlessness across the observation period, see Table 5.2. However, with both life satisfaction and friendlessness, most of the sample report maintaining the 'desired outcome' across the observation period. Ninety-three per cent report having friends at both timepoint one and two, and 71% report high wellbeing across the observation period. As a result, although similar numbers of individuals are seen to make 'positive' and 'negative' transitions, as proportions individual are more likely to make positive than negative transitions for both wellbeing and friendlessness. For example, only 3% of those with one or more friends at time point one report transitioning into friendlessness whereas 79% of those in a state of friendlessness at time point one with gain one or more friends across the observation period. Likewise, individuals are more likely to maintain high wellbeing or transition into high wellbeing than to maintain or transition into low wellbeing.

Table 5.1: Frequencies of Change in Life satisfaction between Timepoint One and
    Timepoint Two

Subjective Wellbeing	Time Point Two Frequencies		
Time Point One Frequencies	Low Satisfaction	High Satisfaction	Total
Low Satisfaction	385 (35%)	717 (65%)	1102 (100%)
High Satisfaction	663 (13%)	4283 (87%)	4946 (100%)
Total	1048 (17%)	5000 (83%)	6048 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = hypothesised to be positively associated with wellbeing, orange = hypothesised to be negatively associated with wellbeing.

Table 5.2: Frequencies of Change in Friendlessness between Timepoint One and
    Timepoint Two

Friendship	Time Point Two Frequencies		
Time Point One Frequencies	No friends	Friends	Total
No friends	60 (21%)	228 (79%)	288 (100%)
Friends	184 (3%)	6417 (97%)	6601 (100%)
Total	244 (4%)	6645 (96%)	6889 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = hypothesised to be positively associated with wellbeing, orange = hypothesised to be negatively associated with wellbeing.

5.2.2. Change in Family Presence and Community Activity

Family network change, like wellbeing and friendlessness see most of the sample (71% n=5254) reporting a persistent presence of the variable, in this case the presence of at least one family member. In contrast, only 39% (n=2761) of the sample report being active in at least one community organisation at both time points. Moreover, 2197 individuals report persistent inactivity in community organisations, a larger sample proportion than those that report persistent family network absence or persistent friendlessness.

Contrast can also be identified when examining transition proportions. Of those that are not active in community groups at time point one, only 34% become active in a community group across the observation period. In contrast, 79% of those without friends will gain a friend across the observation period and 79% of those

without family members will gain a family network between time point one and two.

Not only are there more individuals maintaining a lack of activity in community groups than those maintaining a lack of family or friendship networks, but those who are not active in community groups at time point one are more likely to gain a friend or family member than they are to become active in a community group.

Table 5.3: Frequencies of Change in Presence of Community Network

Community Group Activity	Time Point Two Frequencies		
Time Point One Frequencies	Not active in community groups	Active in one or more community groups	Total
Not active in community groups	2197 (66%)	1130 (34%)	3327 (100%)
Active in one or more community groups	1001 (27%)	2761 (73%)	3762 (100%)
Total	3198 (45%)	3891 (55%)	7089 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = change hypothesised to be positively associated with wellbeing, orange = change hypothesised to be negatively associated with wellbeing.

Table 5.4: Frequencies of Change in Presence of Family Networks

Non-residential Family	Time Point Two Frequencies		
Time Point One Frequencies	No family	Family	Total
No family	411 (21%)	1544 (79%)	1955 (100%)
Family	218 (4%)	5254 (96%)	5472 (100%)
Total	629 (8%)	6798 (92%)	7427 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = change hypothesised to be positively associated with wellbeing, orange = change hypothesised to be negatively associated with wellbeing.

In contrast to community activity, friendlessness, and life satisfaction, where similar numbers of individuals were observed to transition in both directions, family network change is more one-directional. One thousand five hundred and forty-four individuals gained a family network in comparison to just 218 that lost a family network across the observation period. It is important to note the types of familial contact that are likely to be gained and/or lost in later life. One could presume that

most family network net gains come from the births of children, grandchildren, and great-grandchildren and that it may be more likely that older adults experience the loss of parents, siblings, aunts/uncles, and cousins. Research suggests that the wellbeing benefits associated with these different ties are very distinct (Brewer et al., 2015). It is therefore important to acknowledge that these gains and losses may not be as comparable as presented here.

5.2.3. Change in Bereavement, Living Alone and Retirement

Seventy-six per cent (n=5483) of the sample report not experiencing a spousal bereavement either prior to or during the observation period, see table 5.5. These individuals could be single, married, separated or cohabiting. Seventeen percent (n=1225) experience a spousal bereavement prior to the observation window and just seven percent (n=497) experience a spousal bereavement during the observation window.

Table 5.5: Bereavement Frequencies

Bereavement	Time Point Two Frequencies		
Time Point One Frequencies	Not Bereaved	Bereaved	Total
Not Bereaved	5483 (92%)	497 (8%)	5980 (100%)
Bereaved	53 (4%)	1172 (96%)	1225 (100%)
Total	5536 (77%)	1669 (23%)	7205 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = change hypothesised to be positively associated with wellbeing, orange = hypothesised to be negatively associated with wellbeing.

Twenty-seven percent (n=2013) report living alone at time point one, see table 5.6. Across the observation window an additional 537 individuals (7% of the sample) transition into solo living. In contrast, just 114 (2% of the sample) report transitioning out of solo living. This fits with the cross-sectional bivariate statistics in section 1.4.6 that explored household composition and age. Here a trend toward solo living with increasing age was observed, and likewise across time these longitudinal frequencies show more people transitioning into than out of solo

living. As a result, the conditional logit models control for transitions into solo living rather than out of solo living.

Table 5.6: Living Alone Frequencies

Living Alone	Time Point Two Frequencies		
Time Point One frequencies	Does not Live Alone	Lives alone	Total
Does not Live Alone	4877 (90%)	537 (10%)	5414 (100%)
Lives alone	114 (6%)	1899 (94%)	2013 (100%)
Total	4991 (67%)	2436 (33%)	7427 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = change hypothesised to be positively associated with wellbeing, orange = change hypothesised to be negatively associated with wellbeing.

By time point two 91% (n=6791) of the overall sample are retired, with twenty percent (n=1355) of this group transitioning into retirement during the observation window (see Table 5.7). More people are observed to have transitioned into rather than out of retirement therefore this direction of transition is controlled for in the conditional logit models.

Table 5.7: Retirement Frequencies

Retirement	Time Point Two Frequencies		
Time Point One frequencies	Not retired	Retired	Total
Not retired	534 (28%)	1355 (72%)	1889 (100%)
Retired	97 (2%)	5436 (98%)	5533 (100%)
Total	631 (9%)	6791 (92%)	7422 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = change hypothesised to be positively associated with wellbeing, orange = change hypothesised to be negatively associated with wellbeing.

5.2.4. Change in Health

One thousand seven hundred and eighty-eight individuals report a negative change in their self-reported health, compared to only 814 individuals that report a positive self-reported health transition (indicated by the green- and orange-coloured boxes in Table 5.9). Similarly, more individuals report the development of an illness or

disability (n=1360) than those that report losing a disability or illness (n=898), see Table 5.8. These trends are perhaps unsurprising considering many chronic conditions are incurable and/or degenerative. Considering the overall health deterioration of the sample across the observation period it is of interest that no overall wellbeing deterioration was observed for the whole sample (see section 5.2.1).

Table 5.8: Presence of a Long-term Illness or Disability Frequencies

Presence of an Illness or Disability	Time Point Two Frequencies		
Time Point One Frequencies	Does not have illness or disability	Has illness or disability	Total
Does not have illness or disability	2234 (62%)	1360 (38%)	3594 (100%)
Has illness or disability	898 (24%)	2921 (76%)	3819 (100%)
Total	3132 (42%)	4281 (58%)	7413 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = change hypothesised to be positively associated with wellbeing, orange = change hypothesised to be negatively associated with wellbeing.

Table 5.9: Self-reported Health Frequencies

Self-reported health	Time Point Two Frequencies			
Time Point One Frequencies	Fair/Poor self-reported health	Good self-reported health	Excellent/Very Good self-reported health	Total
Fair/Poor self-reported health	934 (72%)	288 (22%)	68 (5%)	1290 (100%)
Good self-reported health	573 (30%)	894 (46%)	458 (24%)	1925 (100%)
Excellent/Very Good self-reported health	297 (10%)	918 (32%)	1632 (57%)	2847 (100%)
Total	1804 (30%)	2100 (35%)	2158 (36%)	6062 (100%)

Sample includes individuals over the age of 60 in wave 9 and 3 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Colours indicate the following: yellow=no change, green = change hypothesised to be positively associated with wellbeing, orange = change hypothesised to be negatively associated with wellbeing.

5.2.5. Summary

Of all the frequencies presented in this section the comparison of the patterns observed for friendlessness and community activity are of particular interest.

Ninety-three per cent of the sample report having friends at both times point one and two meaning that transitions into or out of friendlessness are relatively uncommon experience in later life. Older adults are much more likely to sustain a friendship network than they are to transition into friendlessness and are more likely to transition out of friendlessness than they are to stay without friends. Given the importance of friendship for wellbeing identified in Study One these findings provide an optimistic assessment of the state of friendlessness amongst older adults in the UK.

The observed changes in community organisation activity, however, present a quite different picture. Only 39% sustain activity in one or more community organisations across the observation period, with 30% transitioning into or out of community activity. This makes community activity a less stable state than the presence of a friendship network in later life, and a lack of activity in community organisations more common experience than friendlessness. Despite the larger numbers experiencing transitions into or out of community inactivity, those that are not active in a community activity are more likely to remain inactive than those who are without friends are likely to remain friendless.

The next section continues to estimate, with greater accuracy, the effect of a transition into a state of friendlessness on wellbeing. This is achieved with the use of conditional fixed and random effects models.

5.3.   Conditional Fixed-effects Logit Models

To understand what the association between a transition out of friendlessness and transitions form low to high wellbeing might be conditional logistic regression models are fitted. These models often also termed fixed-effects logit for panel data models, fit maximum likelihood models with a dichotomous dependent variable. In this case 0 represents low wellbeing and 1 represents high wellbeing. These models differ from regular logistical analysis in that the dataset is grouped (in this case the

observations are grouped by individual). Therefore, the likelihood computed is conditional relative to each individual. As these models take an individual as its own control all factors varying between groups or individuals are controlled for. The model adopted also includes controls for several within individual time-variant factors, such as a change in the presence of a family network, change in active membership in one or more organisations, change in solo-living status, a transition into retirement, the experience of bereavement, a change in one's subjective health status and/or a change in the presence of a long-term illness or disability. Models are fitted for two samples, the first sample (full sample) includes all individuals over the age of 60 at time point one, who responded to both survey waves. This sample is most comparable with the models fitted in the first thesis study. The second sample excludes all individuals who relocate neighbourhood (Lower Super Output Area) during the observation window. It is hypothesised that home relocation may disrupt friendship networks and impact wellbeing (see section 3.4.2.4) thus impacting the observed association between transitions into friendlessness and wellbeing. Conditional random effects models are also presented to provide greater depth of understanding. In these models within group (individual) factors are not controlled for.

Table 5.10: Conditional Fixed and Random Effects Logit Models exploring the factors associated with a change from having low satisfaction to having high satisfaction with life, across a six-year observation window, models with full samples and with just those who have aged in place.

	Model One: Conditional fixed effects with full sample	Model Two: Conditional fixed effects with those who aged in place	Model Three: Conditional random effects with full sample	Model Four: Conditional random effects with those who have aged in place
Friendship Network (Reference category= No close friends)				
Friendship	1.157	1.281	1.282	1.246
	[0.271]	[0.330]	[0.170]	[0.181]
Non-residential Family Network (reference category = No family members)				
Family	1.093	1.022	1.325***	1.319***
	[0.135]	[0.134]	[0.102]	[0.109]
Community Group Activity (reference is not active in community organisations)				
Active in one or more organisation	1.348**	1.322*	1.582***	1.612***
	[0.139]	[0.147]	[0.093]	[0.103]
Solo-Living (reference category = Does not lives alone)				
Live Alone	1.062	0.819	0.772***	0.782**
	[0.221]	[0.204]	[0.059]	[0.065]
Bereavement (reference category = Not bereaved)				
Bereaved	1.071	1.025	1.102	1.083
	[0.249]	[0.280]	[0.097]	[0.104]
Retirement (reference category = Not retired)				
Retirement	1.787***	1.536**	1.758***	1.687***
	[0.230]	[0.211]	[0.134]	[0.140]
Long-standing illness or Disability (reference category = Does not have an illness or disability)				
No	1.064	1.137	0.784***	0.801**
	[0.117]	[0.135]	[0.053]	[0.059]
Subjective Health Status (reference category = Fair/Poor)				
Good	2.200***	2.154***	3.288***	3.244***
	[0.281]	[0.298]	[0.247]	[0.264]
Excellent/very good	2.749***	2.641***	4.970***	5.062***
	[0.431]	[0.448]	[0.425]	[0.469]
Insig2u			1.292*	1.391*
			[0.165]	[0.183]
N	2614	2228	12956	11441
Pseudo R-sq	0.044	0.037		

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Exponentiated Coefficients (odds ratios). Standard errors in brackets *** $p<0.001$, ** $p<0.01$, * $p<0.05$

As presented in table 5.10, the presence of a within-individual transition from not having any friends to having friends is **not** significantly associated with a transition from low to high life satisfaction. This is a notable finding given the relationship between the presence of a friendship network and wellbeing found in the cross-sectional models in Study One. One hypothesis for this lack of relationship is due to

the stability of this variable observed in the dataset. Only 228 individuals report transitioning from having no friends to having one or more friends across the observation period. Another explanation includes the presence of confounding variables not sufficiently controlled for in the cross-sectional models in Study One. As transitions out of friendlessness are found to be insignificantly associated with improvement in wellbeing in both the fixed and random effects models it is unlikely the lack of association is due to underlying uncontrolled confounders.

Becoming active in one or more community organisations is significantly associated with a transition to high wellbeing, in both fixed and random effects models. Those who experience a transition from not being active in a community organisation to becoming active in one or more community groups have 1.35 times greater odds of experiencing a transition from low to high wellbeing. This is particularly notable given only 35% of those who were not active in a community group at time point one did transition into community activity across the observation window, with the majority remaining inactive in community organisations. This could indicate untapped wellbeing improvements for many remaining inactive in community organisations in later life.

Transitions into retirement are also significantly associated with improvements in subjective wellbeing across all models. Those who retired within the observation window had 1.8 times higher odds of transitioning from low to high wellbeing, an even larger effect than that seen for community organisation activity. However, the biggest impact on an older adult's odd of transitioning from low to high wellbeing, was a change in their subjective health status. Those who transitioned from fair or poor health to excellent or very good health had 2.7 times increased odds of reporting an improvement in their life satisfaction.

In the random effects models those who developed a long-standing illness or disability were statistically less likely to experience an increase in their wellbeing. This was not significant in the fixed effects models, potentially suggesting the effect

is not due to the transition itself but due to the shared negative experience of those with long term health conditions and illnesses.

Similarly, the presence of a family network and living alone held significance in the random effects models but not in the fixed effects models. Gaining a family network is associated with increased odds of high wellbeing when time invariant factors are not controlled for but is not significant when between individual differences are controlled for. There is likely to be long term differences between those with and without family networks, separate from the impact of a single transition from not having to having a family network within the observation window. Living alone, holds a negative relationship with changes in life satisfaction in the random effects models. Whereby individuals transitioning from not living alone to living alone had lower odds of experiencing an increase in their wellbeing across the observation window.

Bereavement was found to be insignificant across all models. One might hypothesise that many of those who experience a bereavement may also experience a transition into solo living. However, transitions into bereavement remained insignificant when living alone was removed from the model.

5.4.   Conclusion

This study aims to explore friendship network and wellbeing change across time. Firstly, observing the changes in the presence of older adults' friendship, family, and community organisation activity across a six-year period (section 5.2), and secondly exploring the impact of a transition out of friendlessness on an individual's odds of transitioning from low to high subjective wellbeing (section 5.3). The results are summarised below.

Two hundred and twenty-eight individuals, out of 6889, transitioned from having no friends at time point one to having one or more friends at time point two (3%). The overall proportion who lost a friendship network is identical to the proportion

recorded to have gained a friendship network, or to have transitioned out of friendlessness (3% n=184). Six thousand four hundred and seventeen individuals sustained at least one friendship at both time points.

Whereas most of the sample hold at least one close friend and at least one family member, even numbers of individuals report being active and inactive in one or more community organisations. Much higher proportions report gaining their first friend or family member than the proportions that remain without friends or family. However, smaller proportions transition out of community inactivity than those that remain inactive in community organisations. For those that do become active in one or more community organisations, this transition is associated with an increased odds of wellbeing improvement. There is no statistically significant association between transitions out of friendlessness and wellbeing.

Observing change at two time points has limitations. Researchers cannot be sure what may or may not have occurred between these time points. Friendship networks may have been lost and regained, and an individual's wellbeing may have fluctuated between the timepoints before returning to its original state before the final observation point. With only 228 of 6889 individuals reporting a transition out of friendlessness within the observation period, the validity of the results can be questioned. This stability could be reflective of an underlying stability in friendship networks or could indicate an inappropriateness of a six-year observation window for capturing friendship change. Future research should explore how long an individual might stay in a state of friendlessness to assess the validity of a six-year observation period.

The following study adopts an alternative approach to capturing data on friendship change. It utilises a unique moment of national social network change (COVID-19 Pandemic) to observe patterns in older adult's general social network maintenance behaviours. This study explores the characteristics of the friendship networks that remain throughout this period, and the impact of various friendship types on a participant's wellbeing. The study can further interrogate the distinctions between

a friendship, a family relationship, and a community tie using qualitative methodologies, adding greater analytical depth to the comparisons between these quantitative categories.

Chapter Six will continue to explore:

- How older adults described their broader social networks (section 6.2)

- How older adults described the mechanisms with which these networks impacted their wellbeing (6.3)

- The impact of COVID-19 on their friendship networks (6.4)

- The ways that these friendship networks were specific to the study context (6.5)

6. <u>Study Three Results: A Qualitative Exploration of Friendship Network Maintenance/Change of Older Adults during the Second COVID-19 National Lock-down</u>

6.1. Introduction

The overall aim of this thesis is to investigate the association between the friendships that older adults keep, the changes these friendships go through and the impact of these friendships on the wellbeing of the older adults to whom they belong. This chapter, the third results chapter in the thesis, is the first to examine these relationships through qualitative methodologies. The study investigates the friendship networks of twenty older adults (60+) who live and have aged-in-place in the neighbourhood of Barton-on-sea (Hampshire, England). More specifically, attention is paid to the ways that these 20 friendship networks are described, the impact they have on the individual's wellbeing, and the ways these friendships are perceived to have changed and/or are predicted to change. The study participants are interviewed remotely during the second national COVID-19 'lock-down' in November and December of 2020. The impact of the COVID-19 Pandemic on the results is a central theme throughout.

Several methods are used in this study. Participants are asked to complete a demographic survey with questions that mirror those in Understanding Society (the survey used in the first two results chapters). This is followed by, 1:1, remote, semi-structured, interviews. These interviews adopt a convoy model technique to stimulate social network discussions (see section 3.5.4.1). Unlike the prior two chapters that rely on quantitative data to capture friendships, this chapter explores how the individuals themselves articulate and understand their friendships and the ways these fit within their wider social networks. This approach allows for a more nuanced understanding of friendship change by identifying the emotions and motivations that accompany friendship maintenance behaviours.

The first results section (6.2) outlines the structural features of the social networks captured in the interviews. This includes a discussion of the location of the participant's friendship networks across the interview social convoy models (sub-section 6.2.1). This section also includes a discussion of the structural features within three friendship archetypes identified during analysis, core friendships, peripheral friendship, and associative friendships (sub-section 6.2.2). The next section goes on to explore the ways that friendships are discussed in the interviews to both positively and negatively impact the wellbeing of older adults (section 6.3). This is followed by a discussion of the ways that these friendship networks retrospectively change and the impact of the COVID-19 pandemic. The final section (6.5) explores the ways that these results may be unique to Barton-on-sea, the study location and how this environment enabled and/or disabled the maintenance of strong friendship networks amongst participants.

6.1.1. Research Approach

Aim: To explore how older adults' (60+) understand and manage their friendship networks during the coronavirus pandemic.

Research
Questions: 1) How did the participants describe their friendship networks?

1a) How did the participants describe these friendships in the context of their wider social networks?

1b) How did the participants describe the impact that these friendships had on their wellbeing?

2) Did the participants describe experiencing any retrospective changes to their friendships because of the COVID-19 restrictions or otherwise

2a) If not, why not?

2b) If so, was this associated with a change in their wellbeing?

Methods: 1:1 Semi-structured remote interviews with 20 older adults. All
participants with live alone or with a partner, are over the age of 60
and have 'aged-in-place' in one neighbourhood.

6.2.   Social Network Structures and Wellbeing

6.2.1. Social Convoy Model Structures

The twenty convoy models produced across the interviews represent a diverse
range of social networks in terms of both their size and composition. Some social
networks in this study consist of >30 individuals including groups of friends that are
not individually named or counted, other social networks are made up of 3 or 4
single individuals. There is also considerable heterogeneity in the geographic
proximity of the social network alters. Participants describe maintaining close
relationships with individuals overseas (including Southeast Asia, Australasia, and
North America), across the United Kingdom, within their local communities, and
within their own households. A broad range in the frequency of interaction within
these relationships is also captured, from daily face-to-face interaction, right
through to relationships maintained with a phone call every couple of years or a
Christmas card once a year. Alongside friendships, participants include familial,
animal, employment-related and community contacts in their convoy models.
Examples include spouses, siblings, children, grandchildren, cousins, in-laws,
nieces/nephews, pets (primarily dogs), neighbours, religious leaders, doctors, and
local politicians. Despite this heterogeneity certain patterns across these social
networks can be identified.

Social convoy models are comprised of three rings: inner, middle, and outer. Figure
6.1 demonstrates the models given to participants and section 3.5.4.1 in the
methods chapter includes further explanation of this. The placement of the
participant's social networks across these models is described in more detail below.

Figure 6.1: Convoy Model used in Participant Activity Sheets
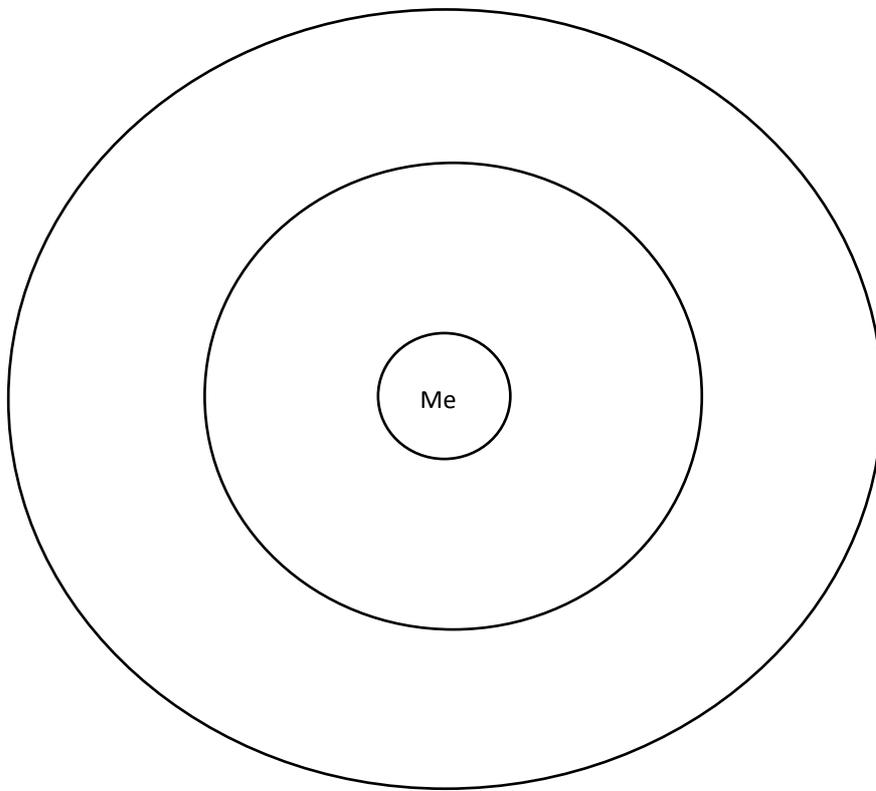
6.2.1.1.   Inner ring

The participants primarily utilise the inner ring on their model to hold household members (primarily a spouse and/or pet), and/or immediate family. For some individuals this inner ring is also reflective of their 'COVID-19 bubble'. More specifically, six older adults have an inner ring that includes only their 'bubble members'. Four of these include a spouse only, one more includes only a pet and another a self-proclaimed 'surrogate family'. Sixteen of the twenty participants report having one or more children, thirteen of these included their children in their inner ring. The other three include their children in their middle ring. In two of these three cases, participants have children who live in Australia, in the third case the participant describes not being in a particularly 'close family'. These individuals all reserve their inner rings for their spouses only.

Five participants include grandchildren in their inner ring and in three of these cases they describe providing childcare on a regular basis. Only three participants include a friend or non-immediate family member in their inner social network ring. This inner ring is therefore primarily reserved for social relationships defined by very frequent (often daily) and intimate interactions. Pets and partners are described as being the epitome of this 'habitually close' relationship form.

6.2.1.2.   Middle ring

The middle rings are heavily populated with both immediate and non-immediate family ties, as well as close friendships. Nine of the twenty participants mention at least one family member in their middle ring ranging from children to aunts and/or siblings-in-law. Thirteen of the twenty participants report having friends in their middle ring. Four people mention neighbours in this ring, and one participant has a close work colleague in this ring.

6.2.1.3.   Outer ring

The outer ring primarily includes non-immediate family members, neighbours, and less close friendships. Six participants include friends or acquaintances from a sports or activity group in this ring. Seven participants place their neighbours here.

The family members listed in this outer ring are differentiated from those in the inner and middle rings, as being 'less close' but still worthy of inclusion. This is either due to their status as non-immediate family or because of their infrequent interaction. Infrequent interaction is often explained by a considerable geographic distance between the two individuals or because of conflict within the relationship. In-laws are frequently differentiated from biological family members and included in this outer ring, alongside siblings and/or estranged children. In contrast, children, and grandchildren are more frequently cited in a participants' middle or inner ring.

There is not an obvious connection between participant life satisfaction and the size/composition of an individual's social network. There are examples of individuals who report being both satisfied and dissatisfied with both large and small networks. Friendships are included across all rings, and it is difficult to draw clear parallels between the number or position of the total friendship network on a social convoy model and the wellbeing of its author.

6.2.2. Friendship Archetypes

Many different types of friendships are described by participants, from life-long friends to golf-friends, work friends to neighbourhood friends. Although not strictly limited to specific placements on the social convoy rings, all participants differentiated closer friends that were placed more centrally from less close friends who were placed comparatively further out. These different friendship forms have been summarised in three analytically generated friendship archetypes: 'core

friendships', 'peripheral friendships', and 'associative friendships'. These are described in more depth below.

6.2.2.1.   Core Friendships

Core friendships primarily occupy space in the middle rings of participant's social convoy models. These friends are often mentioned by name and are primarily described as either 1:1 relationship or as 'coupled' friendship between the participant, their core friend and both of their respective romantic partners. These core friendships have several 'hallmark' features. Firstly, they are all relationships that have been maintained for long periods of time. For many, these are friendships held since school, since their children were young, or from early on in their careers. Secondly, these are friendships that involve frequent interaction, often weekly or daily. These relationships also tend not to be geographically local; individual's keep in touch through remote communication (video conferencing or telephone calls) and through visits several times a year. These friendships are linked to narratives of stability, with participants drawing on their long relationship histories and shared values as a justification of the resilience of these ties.

"I've got two very close friends that we've been friends since we were 16. Really lifelong friends. … They are the main friends in my life, the long-standing friends". "One friend, I interact with more we're, we're in very frequent contact virtually every day … The other two are further away from me. One is, is where I moved from, which is not too long a drive, so she can't drive now, but I do go up there. Oh, well, before COVID I would go up about five or six times a year to visit her".

Mary (13), Female aged 70-74

6.2.2.2.   Peripheral Friendships

Peripheral friendships primarily occupy the middle or outer rings on participant's social convoy models. These are individuals for which the participant may socialise regularly but are differentiated from core friendships, because they are shorter in duration and/or less emotionally intimate. These peripheral friendships are often individuals who live locally, or individuals that the participant shares an interest or activity/hobby with. Individuals within a peripheral friendship might meet in a

personal setting such as their home as well as in a public social setting such as a pub or sports club and would arrange to socialise with their own private telephone numbers at a convenient time. As is elaborated on below, associative friendships in contrast remain bound by the norms set within the socialisation context in which the friendship is formed.

6.2.2.3.   Associative Friendships

Associative friendships are those that tend to occupy the outer rings on participant's social convoy models. These are friendships that are rarely maintained by the individuals involved, instead interactions largely occur spontaneously within the relevant socialisation setting, environment or social situation. As these friendships occupy places at the extremities of an individual's social network and may not be referred to as 'friends' but instead as acquaintances, neighbours, or as [activity group name] friends.

Three different categories through which these friendships were 'associated' to the older adult in question can be identified. The first, are friendships based on an organisation or club, this could be a leisure group or a workplace. Although it is worth noting that only one participant in this sample was engaged in paid employment and therefore these insights cannot be reliably applied to professional relationships. Here, the interaction is primarily confined to a particularly geographic location, specific times of the day and bound by clear rules of behaviour dictated by the associative organisation.

The second type of associative friendship is that where two individuals are friends via a third social network member. Married individuals frequently cite their spouse's friends within this category. They are individuals with which a friendship would not exist if they did not have this mutual tie. It is this mutual link that often arranges and manages the social interactions.

The third type of associative friendship are those that are bound by a geographic residential location (i.e., neighbours). Here the mutual link is not an organisation or an individual but the place that they both live. Not all of an older adult's neighbours were characterised as a residential associative friendship. For some their neighbours remained strangers, and for others their neighbours had become friendships distinct from the neighbourhood context. For neighbourhood associative ties the social interactions primarily occurred in the 'streetscape' and clear norms and rules of behaviour governed these neighbourly interactions. In all three of these associative friendship examples, a third party (the neighbourhood, the organisation and/or an individual) are integral in managing and setting the interaction rules for the relationship.

This section summarised the various relationship structures present in the interview social convoy models and the various types of friendship described throughout the interviews. The following sub-sections continue to outline friendship themes drawn out of the interviews during thematic analysis. Sub-section 6.3 focusses on the ways that participants described their friends to impact their wellbeing, sub-section 6.4 explore the impact of the COVID-19 Pandemic on these networks and sub-section 6.5 explores the role of the case study location.

6.3.   Impact of Friendship on wellbeing

There are various friendship forms present throughout the interviews, these have been captured in the previous sub-section as three friendship archetypes. The following section outlines the ways that friendships are found to impact individual wellbeing both positively and negatively. These mechanisms are not universally found within all friendship archetypes, and some are exclusively observed in certain friendship archetypes. Attempts have been made to highlight the circumstances in which these wellbeing mechanisms are observed within and/or across the three archetypes.

6.3.1. Emotional Disclosure

The ability for an individual to be emotionally open and to disclose their true feelings even when negative or undesirable, is described as a key mechanism with which friendships foster high wellbeing. This emotional openness is fuelled by a sense of deep trust often built over many years. It is also fostered by an alignment of values and outlooks between friends. This openness generates a safe space for communication without judgement. The risks associated with raising sensitive or controversial topics are lessened as there is a greater degree of confidence that both parties will either be able to disagree without conflict or will agree because of their foundational alignment of values.

"It's being able to be totally yourself or voice your opinions. I probably wouldn't agree with them, but you're not going to fall out over it. Good friends. You can say what you like in front of them".

Michael (2), Male aged 70-74

As well as providing a safe space for the outlet of potentially controversial opinions or conversation topics, this emotional openness also allows older adults to 'offload' negative emotions, discuss conflicts in other relationships, and seek advice around difficult events or experiences. For example, participants described needing someone to talk to about health issues and/or familial/spousal disputes.

"My two friends, that were from work. They would probably be on that outside line because I definitely wouldn't disclose much intimate stuff with them, but I do class them as friends and, we try and meet up about three times a year or more. I describe them as not that close because I wouldn't say discuss anything that was going on maybe in my marriage or I might say, Oh yeah, [Husband's] annoying me, but I wouldn't go any further if there was anything, there isn't, but I wouldn't probably tell them. Yes. I would tell [core friend] probably my most confidante. Yeah".

Ruth (14), Female aged 60-64

The extent to which an individual feels able to present themselves honestly and talk about their negative experiences is a differentiating feature used by participants to determine the closeness of a friendship. High levels of emotional disclosure are a hallmark feature of 'core' friendships, whereas participants described engaging in more guarded behaviours with their peripheral or associative friends.

Interestingly, this emotional openness is not a universal feature of all types of close relationships. Some family members, for example, were described occupying spaces in a participant's inner circle but the relationships not being particularly emotionally open. For example, participants describe feeling reluctant to notify family members of a negative experience, such as worsening health-condition. They instead describe relying on visual cues during face-to-face interactions (such as an inability to walk upstairs) to prompt family members to 'take note' and to spark a discussion about their support needs. In the context of the pandemic, these participants note an increased difficulty of inducing supportive conversations with their family members due to the lack of visual cues within face-to-face interactions.

"They (children) don't really understand, but we both (Shirley and her husband) have gone downhill a bit this year with our health and energy levels. I don't think they fully get that. I'm sure they don't. They haven't been, they haven't been seeing us so much. And I don't always think they're always as interested as you feel they should be. You don't want to burden them with small issues in your life. I suppose you want, you want to have a congenial conversation with them and to listen to what they're up to or what their problems are. You don't really want to say, Oh, you know, dad had a really bad attack of indigestion last night. Or, you know, I felt sick this morning or anything like that. … In the summer, when they came over for picnics in the garden or to have a little picnics on the beach, they could, they saw that I hadn't got the stamina or the strength that I had had and that I wasn't doing as much, and everything I was doing was a bit slower"

Shirley (11) Female aged 75-79

"You confide more to your friends than you do your family, you feel more relaxed and able to do that. If something's bothering you, maybe you would talk about it to your friends rather than worry your family. No, I think you do confide in your close friends, yeah".

Mary (13), Female aged 70-74

6.3.2. Support Exchanges

This emotional openness and the ability for older adults to share their feelings, needs, and concerns creates the opportunity for their friends to meet these needs prompting the transmission of support exchanges. Many participants reported both giving and receiving advice and support within these close friendships. Shared life-histories, shared gender and/or shared age-based challenges all act to solidify the bonds and allow this advice and support to come from a place of perceived understanding and solidarity. This similarity is framed in contrast to other social network relationships that may be different in these regards.

"Well, I suppose when it comes to bearing in mind that they're all in their seventies, we've all got health issues. Our Husbands have all got health issues. So sadly we spent quite a lot of time talking about health, which wouldn't have happened 30 years ago, but now it does. And also we talk about how our relationships with our husbands, to some extent, yeah, I got, and our lives on that particular day, you know, we talk about our children and our concerns with our children. That's also takes up a lot of time on children, You know, very well within a family. There are always things to talk about, what's going on. People always have concerns and worries. Yeah".

Catherine (27), Female aged 60-64

"Participant: It's an irregular contact, but one that matters.

Interviewer: In which ways does it matter?

Participant: They [friends] know me, they've known me over a long period of time, and they know my circumstances.

Interviewer: Yeah.

Participant: And they're, I suppose supportive is the right word".

Anne (20), Female aged 80-84

"So yeah, she, she, she's the person that I confide in and I know I can ring her up or I can say, shall we go and meet? I've got something to discuss, you know, I've got a problem, you know, just a general meet up or a girly chat, which you can't do with men around. We don't want them complicating things".

Joyce (26), Female aged 70-74

"I'll get on very well with my wife, but it's nice to have other people to talk to. And especially on a man-to-man situation. I hope you understand that".

Alan (23), Male aged 75-79

There are also examples of friendships that did not display high levels of emotional openness and proactive support seeking behaviours but still contained support transmissions. Participants mentioned monitoring their friends for signs of concern whilst also respecting their privacy and boundaries. Referred to as 'checking in' or 'watching out' several participants describe paying extra attention to those living on their own to ensure they aren't lonely or isolated.

"We, you know, throw some emails and text messages around, but not in any, in any significant way or any structured way. It was just generally keeping in touch. Cause you're conscious that, you know, some of the guys for whatever reason are, you know, they live on their own. Most of the guys that I play with, we're all seniors. So we were all over 65. So, you know, not everybody still has a partner. So, you do just tend to keep a little bit of a look out for those guys that you know, who might be on their own".

Gary (7), Male aged 65-69

"We talk to our friends on the phone as well and keep in touch with people I know who are on their own who I used to work with. There's a guy down in Somerset and his wife died about three years ago now and he really feels it. So, I ring him up at least once a month to talk. And one of the secretaries that I used to know at work she's on her own. So, I give her a call, see what's going on.

Shirley (11), Female aged 75-79

Participant's expressed value in having people 'on-hand' to respond to practical needs such as helping them with a task or job. There is wellbeing benefit in both the knowledge that someone is around if needed (perceived support) and in the actual transmission of support around an instrumental task. The value of this perceived support, where participants know there are people they could call upon if needed, is also evident in friendships that are not local and therefore less able to perform instrumental support tasks. In these cases, participants describe the value of knowing that their friend is 'at the end of the phone' if they ever need someone to talk to.

"I would like a couple more close friends nearby. Particularly now and again you want someone to help you out with something, I've got no one to help me. You know "can you hold this up here" so I can screw some holes in or fit something in the car or I haven't got anyone to help with stuff like that.".

Anthony (8), Male aged 65-69

"It isn't perfect. I'd much rather have friends locally who I could go for a walk with and had something in common with, but that actually hasn't happened really. So, (I'm a) little bit dissatisfied, I suppose".

Shirley (11), Female 75-79

"So, so really it's like my, one of my closest friends who lives just round the corner from me. The sort of person that, you know, you could phone in the middle of the night, they would be there for you. I've got quite a few friends like that. There's a difference between friends and acquaintances and you don't have many friends, you have a lot of acquaintances. … I know that I could phone them without hesitation if I was in trouble and they would come".

Helen (18), Female aged 60-64

6.3.3. Shared Interests and Belonging

Alongside the benefits of being emotionally open and receiving support from one's friends, participants also explain how they gained wellbeing value from their 'lighter' less emotionally intimate friendships. For those who are associated through an interest-based organisation these contacts can act as a unique source of interest-based interaction and hedonic pleasure. Participants describe being able to

maintain different types of conversation with these interest-based friendships, whether this is a shared source of humour, shared interest, or shared outlook.

"Well one of the major problems in my life, really this year caused by COVID was that I was working one shift a week, the [Charity Bookshop], where I had fairly close relationships with the people I was working with, but those friendships have really drifted away. They've all got their own lives and we're not seeing each other regularly. They've all got problems. So that's been quite a major loss really because we had, we had the love of books in common. We had a lot in common, really culturally say the word, but that has gone, which is sad".

Shirley (11), Female 75-79

"but my Tennis colleagues, because I play tennis with them twice a week in most cases. And so, you know what it's like in a sports situation where you have banter and you have lots of jokes. And we got we after our tennis, we, we play eight 30 in the morning. And so we go down for a coffee on a bike and roll or something like that. And you know, the conversation flows and people swap jokes and stuff like that. And that's, that's important to me. And I've, I've been missing out because of course there's been no tennis".

Richard (4), Male aged 70-74

There is a sense of belonging and social identity gained through these group associations, not seen in other friendship types. Participants use role-based language to name themselves and their friends, reinforcing this as a part of their identity. For example, participants describe themselves as 'gardeners' or 'golfers' first before describing the connections they have through their golf-friends or gardening-buddies. This role-based language is still evident in friendships formed by association of a shared interest but without a formal organisation. For example, in friendships formed through dog walking, participants proudly announce that they are 'dog-people'. This sense of group identity, and pride in adopting the responsibilities of being a member of the group is reported to contributes significantly to individual wellbeing of the participant in question.

6.3.4. Reciprocity

Linked to several of the discussions around perceived and/or received support exchanges are narratives of reciprocity. Value judgements about the level of reciprocity present within a friendship and the impact of this on the wellbeing of the participant are discussed at length throughout the interviews. This is a feature used to differentiate the placement of more and less close friendships on participants social convoy models.

A lack of reciprocity is a source of tension within relationships causing negative wellbeing. Participants express concerns about over-burdening their support networks asking for 'too much' and frustration when others in their network 'took advantage' of their generosity of support. Within core friendships individuals trust that the support exchanges are truly reciprocal and equal. Within peripheral friendships there are some narratives of dissatisfaction and conflict around the presence of a perceived inequality within the relationship. Within associative friendships people describe maintaining clear boundaries to ensure they are not either over-burdening or over-giving with their connections.

"Well, the neighbours are just good because they're there and if I need them, it's, it's instant and it's reciprocal arrangement. So, it sort of works in two ways. My immediate, next-door neighbours are in their eighties, stroke, nineties. Yeah. And we just keep a weather eye".

Gary (7), Male aged 65-69

"Yes. I've got very good neighbours. We all know we're there for each other. We will help each other whenever anyone needs it. But we're not forever knocking on each other's doors or things like that. You know. We are all there for each other and we know we're there for each other. We're sort of five houses around me that we're all in a group. We'll meet up a couple of times a year, all of us and have a meal out somewhere, something like that. But then no, we don't bother each other unnecessarily".

Joyce (26), Female aged 70-74

A perception of relationship inequality includes both circumstances in which there is a perceived discrepancy in emotional or instrumental support but also when there is a perceived inequality in an investment of 'relationship labour'. This refers to the extent to which each party in the friendship invests their time and/or emotional labour into behaviours that are seen to be relationship maintaining. A sense of a lack of reciprocity is also highlighted in circumstances in which there was a lack of appreciation or gratitude for the transmission of support. Low reciprocity relates to feelings of resentment, frustration, and/or guilt. It is important to note that this study did not interview both friends within a relationship so judgements cannot be made about whether this inequality was actual or perceived and/or if the other party had also identified an imbalance within the relationship.

"One is a single widowed lady. Who's, who's very, very dependent on me. Actually. I talked to her once or twice a week, she's the sort of friend, that she wants a lot of support. And she, she very rarely wants to know about me or my life. Although I've known her very many years, that's quite challenging. I mean, this week she's talked

to me twice and she didn't once say, how are you? Which is terrible. … I'm afraid, as I'm sure you know, as people get older, they become much more self-centred. … They just want to talk about themselves. They don't, they don't ask questions. They're not interested, especially, especially if they live on their own. … I think obviously living on your own means that you can't share everything. You've got to keep it to yourself, or you've got to phone somebody up, or you've got to email somebody, or send a text or whatever it is. You can't just share your thoughts, can you all the time, you've got no one there for you".

Shirley (11), Female 75-79

Several participants described a lack of reciprocity within a friendship as being related to the wider social network that this friend held. Participants hypothesised that there was a relationship between living alone and becoming 'self-centred' or more demanding within a friendship. This potentially raises questions about the extent to which a loss of certain social ties such as a spouse, a family member and/or a household member may accelerate the loss of additional social network contacts such as friendships. The fewer social network contacts an individual has the greater their reliance on these individuals may become, potentially making it difficult to be fully reciprocal in these support exchanges.

"With regards to the people on my circle. Well, I think my family will probably become more important because as I get older, I may quite likely need to rely on them a bit more to do things for me. At the moment, I'm quite independent. I can do everything myself. So, I'd have to call on them to do things for me. But of course, as I get older, I probably will. So, I think I will become more reliant on my family. So that wouldn't, that wouldn't change particularly. I wouldn't want to become more reliant on my neighbours. So I probably wouldn't need to because my family live so close. It's different if you haven't got family nearby. I think people have no choice, but to rely on their neighbours a bit more, but I don't think I would be in that position".

Catherine (27), Female aged 70-74

The negative wellbeing impact described by individuals who feel that there is an unequal investment of relationship labour, is framed similarly to a negative wellbeing impact described by participants who occupied a connecting or bridging role within a social network. Here, individuals who act as a bridge between two associative friends or connect family members together, sometimes described feeling of stress, exhaustion, and/or frustration with the role.

"I think if it was down to my husband, we would never leave our house. We'd just be here all the time. I mean, it has happened now, but I, I tend to arrange all the holidays, any get togethers, anything like that. He's my husband. When we, when I first got together with him, my family always joked that he didn't talk for the first six months to any of the family members. Cause he's very quiet and he is very reserved, very quiet. He doesn't like, doesn't like being put into social situations. If he doesn't know people, he doesn't particularly like that. And he can get grumpy about things like that".

Rose (24), Female aged 70-74

These processes were gendered, as several male participants expressed a sense that friendship/relationship management was not 'their job' and that their wives managed these connections on their behalf. In these cases, they interacted with many of their social network contacts through their wife's instigation, direction, and instruction. One participant described how his wife had managed his social network posthumously. He had become very close with his next-door neighbours since his wife's death and had since leaned that his wife had reached out to these individuals to create a larger support network for him upon learning about her ill-health and imminent death. This gendered effect was largely attributed to gendered personality differences by participants.

"Generally. My wife is very much more on the social side, on that sort of life thing than I am. I'm just … 'we're going so and so… yes, dear' (laughs)". "My younger son, he does the WhatsApp. … My wife's the one that prompts that all the time. She speaks to him at least twice a week on WhatsApp video call, occasionally he says, 'how's Dad'. … I know what's going on and that. It's called 'being Dad' you just keep in the background".

Gary (7), Male 65-69

"A few of the ladies used to say the men widowed that they're not very good at getting themselves out into the community and doing things, whereas the ladies do you see. So I think it's a gender thing, which is why I think my, my brother-in-law Den has struggled a bit more since my sister's gone, because he just doesn't do anything for himself in a way he doesn't help himself. We've made so many suggestions to him to do this, do that. And then he moans he's lonely".

Rose (24), Female aged 70-74

Discussions of reciprocity also surface in conversations around the impact of the COVID-19 pandemic. In some circumstances the pandemic altered an individual's level of need, perhaps due to a sudden inability for family members or other supportive individuals to travel and/or provide informal care precipitated by the lock-down restrictions on interaction and travel between local areas. Moreover, other individuals who may have previously been relatively independent may have found that they became increasingly reliant on local friends and neighbours for basic needs during the lock-down. This is particularly the case for those who were shielding. At these moments, if a perception of inequality emerged it provided a catalyst for existing relationships to be challenged. Likewise, it also provided an opportunity for the extension of additional support from relationships that were

not previously characterised by this, and in these cases some friendships became closer. Further discussion of this increased community spirit is included in section 6.4. that discusses the impact of the pandemic on community ties.

"I was doing their click and collect and all that for them … helping people out that I consider appreciated it without taking advantage. If you know our meaning, did you get my drift? Well, I'm saying there's some people that you can help who just abuse it. … They expect it. But you know, I help people that appreciate it. And you know are not in a position to do things. But I don't expect thanks, but I want to feel that they appreciate it, you know what I mean, without sort of being a hero or anything. … Like, I take my friends dog out. She can't take the dog because she's a hairdresser but then I quite enjoy having him, so I help her out, but then she cuts my hair. So that's the way it goes. But then you don't expect that don't expect her to do it. And she doesn't expect me to take the dog out. We just do it for each other".

Isabelle (16), Female aged 65-69

6.3.5. Social Network Role Flexibility

For some, the wellbeing benefits they described receiving from their friends were due to the ways that their friendships had adapted to fill roles in their social networks more traditionally occupied by family or romantic partners.

Three participants describe their friends as 'fictive-kin' or surrogate family members. All three of these older adult's live alone and have few living biological family members. These fictive-kin friendships were characterised as 'familial' by participants through their inclusion in rituals considered to be familial as well as through the confirmation of family titles such as 'brother' or 'daughter'. This included, occupying classically familial roles at funerals, celebrating Christmas together and eating Sunday Roasts together. This is particularly interesting when contrasted with those who had close family networks, who (as outlined above) used their close friendships as an outlet to vent frustrations about their families rather than as surrogate familial ties.

"I haven't had sort of sisters or brothers and I have no living family. So now it's, it's very much friends. I am, I do feel very blessed with my friends"

Dorothy (12), Female aged 65-69

"Well, they're (friends) the people I have most contact with because I'm on my own. We agreed a while

back that I would form a bubble with them. But even before that, after I lost my wife, I have been treated very much as part of their family. So, they're, they're a family that I have close contact with and indeed have a significant impact on, on how I feel".

Richard (4), Male aged 70-74

6.4.   COVID-19 and Friendship Network Change

As well as exploring the impact of late life friendships on wellbeing, the interviews explore retrospective and prospective friendship network change. This section explores both the changes attributed to the COVID-19 Pandemic and the general friendship network changes articulated by participants.

6.4.1. Friendship Stability

Core friendships are described as having the highest levels of relational resilience. Despite, individuals being limited in their ability to arrange regular trips, the Pandemic was mostly described to have had little impact on the quality or strength of these friendships. This is likely the result of both the duration and the mode of interaction within these relationships. Core friendships are, by definition, those that the participants trusted and had faith in their strength. The long duration of these relationship means that they have been previously 'tested' and thus were unthreatened by the COVID-19 pandemic changes. It is this same dynamic that arguably also increases the degree of emotional disclosure and trust within these friendships, previously discussed. The long duration of an older adult's relationship with their core friends differentiates these ties from other late-life friendships (peripheral or associative friendships) and is central in generating the trust, relational resilience and high degrees of emotional disclosure that are characteristic of the importance of core friendships on individual wellbeing.

The stability of core friendships during the COVID-19 pandemic is also likely reflective of the previously established interaction patterns in these ties. Participants highlighted that many of their core friendships were maintained

remotely prior to the pandemic and therefore did not need to substantially change when the lock-down policies were introduced.

"Most of my friends live quite a way away, so they're not people we would bump into every day of the week. … None of them were exactly just down the road. So, we're kind of used to maintaining a relationship, which is, based on, you know, remote communications. So, it's just, that's now become the norm rather than the not norm".

Paul (15), Male aged 65-69

This lack of change, and lack of expectation for change, sits in stark contrast to other types of friendship that rely on face-to-face or activity-based interaction. Relationships between participants and their grandchildren or great grandchildren that involved care giving were, are also marked by change rather than stability during the pandemic. In these circumstances participants describe how, due to the unique needs and communication styles of young children, face to face interaction is an essential interaction form for the maintenance of the relationship. In the circumstances where face to face interaction is limited during the pandemic, participants either describe this as being a particularly painful loss or describe holding a preference for these interactions over their own health risk.

"It's hellish, it's hell. … He's (grandson) our world, he's everything to us. … Our bond with him is so close it's unreal. He will stay here, I have him 12, 14 hours at a time. And I've continued to do it throughout the pandemic. Although we didn't do it in first lock-down because my daughter wouldn't let us - that was chilling. It was awful. And this time I've just said no. Can't do it to him and you can't do it to us. … My Husband is in remission from lung cancer. So, he is in year four and ten months, so we have two months to go. So obviously we're acutely aware that we're both older, we both smoke. So, she (daughter) used to bring him in the garden and to be honest that was worse. Because, well, he wants to climb through the window. He wanted to come in. He wanted to see nanny. You know? I mean, as the weeks went on it got to the point where grandad could hold his hand through the window and touch him. Yeah. Which is hell on earth, it's awful. I mean the first three or four times all I did was cry. It's just pointless really and it upset him too because he wanted to touch us".

Helen (18) Female aged 60-64

This lack of change in response to the COVID-19 pandemic is echoed in the ways that participants describe their future expectations of these ties. Participants, describe how the intrinsic relational resilience of these ties means that they are unlikely to change, and that there is little desire for these ties to change. The only exception to this is in narratives of death or loss. Some participants do recognise that their friends, or themselves, may be nearing the end of their lives due to illness and/or old age.

"I'd still have the same sort of way my life is structured with my friends and relatives and things. I've sort of kept in touch with everybody, I've not cut myself off. Yeah. Yeah.

Interviewer: How about in maybe sort of five or ten years' time?

(Laughs) Oh god, I'm 71. I might not be here. No … it would still be the same because that's what my life, you know, that, that how my friendships are and that's, I don't think they're any different now to what they were five or six years ago. So, I can't see five or six years' time there being that many, much different".

Rose (24), Female aged 70-74

In conclusion, friendship duration and emotional intimacy are critical factors in distinguishing relationally resilient social network members. However, the COVID-19 pandemic generated specific challenges for relationships that rely more heavily on non-verbal cues, physical touch and/or other facets of face-to-face interaction. In these circumstances the duration of the relationship or the depth of emotional bond is not sufficient to mitigate the challenges of a transition from face-to-face to online interaction. This highlights the importance of the unique interaction modes of each specific relationship type and how these modes may make a relationship relationally resilient or vulnerable to a different social network shock.

6.4.2. Loss of Socialisation Venues and Activity Groups

The centrality that external socialisation venues and organisations play for organisation-managed associative friendships made these relationships particularly susceptible to dissolution during the COVID-19 pandemic restrictions. Most of the discussed social network loss across the interviews was found in relationships of this sort. Groups were suspended, disbanded, and adapted to meet the challenges of the COVID-19 restrictions. For some participants COVID-19 meant that friendships became closer, for others it led to the dissolution of the friendship entirely. For some participants these losses are described as being particularly painful, for others, these seem to have a minimal emotional impact.

"I go to the [activity] club in New Milton, the [activity] club. But of course, I know the stewards and a whole range of people in there, like, you know, but I haven't been able to go on because of the lock down, you know. … After that last lock-down there, they opened up again, but we didn't go, because there's not much air blowing through it like, you know what I mean? Because it's all closed in. But no, they can't do anything online though they're back open again. Now, you know, we've paid our subs and everything. There's one of the best [activity]

clubs probably. Maybe I would go as far as saying probably in the UK. Like very, very, very, very well run. Really is, really is a nice club, you know?"

Alan (23), Male 75-70

For the friendships that were not particularly close, and involved minimal 'relationship labour', participants described a lost ability to engage in impromptu and spontaneous social interaction. These are ties that are maintained through the act of 'turning up' and spontaneously 'bumping into people'. As the COVID-19 pandemic restrictions changed the rules around the socialisation venues that these interactions would normally occur, these types of interaction were significantly limited.

"I guess the other thing is, is you one of the things I think that, you know, lock-down and everything has robbed us of, is our ability to be spontaneous. You can't just think I'll tell you what, let's go down the pub and go two minutes later. Because even if it was open, you've got to book and you've got a table and all the rest of it. … You do tend to calendar, calendarize, everything you're going to do organize it and you end up organizing it several days out so that everybody's around and, and prepared and all the rest of it. It's so I guess, I guess that is, is certainly is a difference".

Paul (15), Male 65-69

"Okay. So, this time, last year, probably I may have moved, moved [Colleague 1] more to the middle because we were at work. … Cause I would have chatted to her a lot more than I do these days. It's not quite the same on teams (laughs) It's not so spontaneous. I think it's when you're at work, I'm just going to go and see [Colleague 1], you know, if she's in her office and have a moan about that person or this person or whatever it was about in the, you just don't tend to do that so much now".

Ruth (14), Female 60-64

In some cases, participants describe how their friendships are contingent on their ability to continually maintain the skills and stamina necessary for their contribution to an activity group. For example, several participants in sport groups described feeling that they would physically no longer be able to maintain the energy levels needed for group participation, and in one case (a car club) the participants said that after a year of lockdown many of the member's licences would have lapsed and that they would be unlikely to be given these back. This highlights that a desire to resume an activity maybe not be sufficient to pick up previous social events and activities.

"Well, I think it's partly, everybody's getting older, and you have in your mind before you get to retirement that okay i'm still able i'll be doing things and enjoying things. And it gets to be very, very difficult to sometimes.

Then with racing, that might incur hooking the trailer up and going away for three days and staying bed and breakfast or camping in a motor home or whatever you do and you carry on. And as you get older, it's probably more tiring than when you're young and then when the government shuts everything down. It will be very difficult for a large part of the crowd to get back to doing these things". "And it's quite sad really because you reach a certain age where if you want to get race licence, you've got a job holding onto it over a certain age. It will, if it carries on [after COVID] the crowd, I know will be out of it because of getting a medical and a race license".

Michael (2), Male aged 70-74

There are examples in which participants tried to adapt to maintain relationships throughout the pandemic restrictions. In some cases, whole activity groups were able to adapt, in other cases individuals took it upon themselves to try to maintain relationships outside of these normal activity groups. These adaptions had varied success and the cases that were unsuccessful were associated with varied emotional responses. Some expressed feeling hurt or distressed by a perceived rejection, others simply accepted it as a normal part of relationships management and change.

"You kind of get used to having, you know, your interaction. Your bit of banter from anything up to 20 yards away anyways. So doesn't make a lot of difference to be honest. The only, the only main difference is that in the past, you know, at the end of the game of golf, you, you go and have a coffee together or whatever that became very difficult. So, when you finished you, you basically left and went home. The, the other differences in the golf was that because the, the idea and the rules basically were that you should only turn up at the golf course, you know, 10 or 15 minutes before your game, and you were expected to leave fairly promptly after you finished. What, what happened was you, you tended to keep playing with the same group of people that you would be the same four people playing each, each week. So actually, we, we got quite good at developing methods by which we could actually organize to, to meet in slightly different groups. So, so we did get to meet others, people within the same club".

Paul (15), Male 65-69

"The ones that have stuck as friends and still phone, even if it's just once in six weeks or whatever they will be as they were. And I will not to be rude to the people that used to be in the circle. … But if it goes back to where it was and we all have the same sort of a circle of people meeting each other, probably half of the ones that we will use to share tables and do stuff. I won't be pushing the friendships now. … My attitude is quite hard-nosed on everything in the world. If they don't want to know me now, they can bugger off when they go back".

Michael (2), Male aged 70-74

"Right at the beginning of the first lockdown, we had calls "are you alright?", From various people. I must admit I wasn't so proactive, but that's just my nature. I don't like to get my nose in other people's business too much. But one or two other people have got different ideas. On this second lockdown the reaction from third parties has not been the same, it's all, it's been very muted".

Victor (21), Male aged 70-74

One of the methods adopted to maintain relationships in circumstances in which established interaction modes were no longer possible, was by using remote

communication technologies. In certain cases, this strengthened the friendship in others it led to conflict or even friendship dissolution.

"We've zoomed a couple of times, but you could tell they were uncomfortable with this sort of procedure and environment. So, I think they only did it twice and the conversation was quite stilted at times. … I didn't have the sort of personal interaction I think the personal contact, which is different from even you and I speaking, I think we have a better contact than we had with them. So yeah it's a strange arrangement speaking into a screen".

Thomas (17), Male 75-79

6.4.3. Risk Negotiation

Several participants described perceiving their own levels of infection risk as being different to their friends. This discrepancy in risk perception was played out in a misalignment in everyone's willingness to follow the national social distancing rules. This led to conflict and/or feelings of resentment within friendships where individuals deemed their friends to be either following the rules too strictly, or not strictly enough. It is worth noting that there was little evidence of a clear correlation between one's self-perception of their own risk and their health status or characterisation as 'at risk' by the government.

"If I could have done it I would've done it … This is difficult because one of our neighbours who we are close friends with, they were supposed to be coming on holiday with us and obviously this year they couldn't ... A couple of them won't go out, won't do things, but you know, then others of us would if we could".

Rose (24), Female aged 70-74

"It's, it's just my husband and I at the moment and don't get me wrong. We get on fine, but it's nice to have other people as well and go out and go out for lunch. We can't go out for lunch. I won't go out for lunch. I know I could go up and it's probably quite safe, but we can't have lunch or go out and have coffee. Let me go and do the shopping together. We'd always have a coffee while we were, I can't do that. It's silly things like that, that I miss. My neighbour said to me, well, why don't you can't have a meal? Cause we've got friends that do go out and have a meal. And I said, no, it's not worth the risk. There's no point take a risk that you don't need to take".

Shirley (11), Female aged 75-79

"I'm not one of these people I didn't need to shield. So I thought, well, I'm not going to live the next, however long this goes on for just sitting in my house, twiddling my thumbs. I'm just going to go out and about and do what I want to do, but do it in what I consider to be my safe way. And you know, I mean I know people who've reached the stage now where they stayed in for so long that they are now frightened to go out, which you know, if you've done it since March. I don't consider that living. I, I, I'm not going to let it control me. I mean Boris is doing a good enough job of trying to control me. (laughs). So, you it's not really, it's impacted on my life, but not to a great degree".

Mary (13), Female aged 70-74

"His partner decided, he was a bit older than me, but she decided him and his wife would go into permanent shielding. So apart from speaking to him, a couple of times on the phone, he is not playing tennis because he's concerned about his health. And so he's one less person that would be in the group. I would have thought would have been there all the way through, so he's not played tennis now for seven months, something like that, which is very surprising".

Richard (4), Male aged 70-74

6.5.   The Study Context

These findings are based on interviews with a small group of older adults in one community in Hampshire England. As a result, the themes and the friendship networks represented are not representative of the friendship networks of other older adults in different locations. This next section highlights a couple of additional themes that particularly draw out the ways that the geographic context of this study impacted the formation, maintenance and dissolution of the friendship networks presented.

6.5.1. Privacy/Community Friendliness

As mentioned in section 6.3 several participant's highlight concerns about over-burdening their friends and expressed a desire to respect people's privacy. Participants also highlighted this as a distinctly Southern English phenomena. Barton-on-sea was described as a 'quiet' and 'peaceful' neighbourhood, in which people didn't bother one another. The duration of one's residency in a neighbourhood was highlighted as an important factor in ingratiating oneself with one's neighbours. There is low resident turn over in Barton-on-Sea meaning that an individual may need to have resided there for a much longer periods of time before being seen to be part of the community than in other neighbourhoods with a higher resident turnover.

"Well, I suppose you haven't really got an awful lot in common with your neighbours? So, when you're outside and they're outside and you're talking, you chat to them and that sort of thing. But I don't think, well, certainly for us, it goes any further. You know, they've got their own families, we've not got a family, so we just say we've got each other and our friends, that's fine with us. But I think the English often don't like to get too friendly with their neighbours, a lot of them. Because I think they think they will be popping around all the time and I suppose that's the same everywhere - might be more friendly up more North? But I think people are fairly not unfriendly, but they like to keep themselves to themselves down here. Unless, they are friends they've had for a long time. And I think people, especially when they get older, perhaps don't like to get too involved with people they never knew in their younger days. ... We've been here 12 years, but a lot of our neighbours have been here not longer

than that and I think they just form their own little parties. … I think because there's no emotional attachment to somebody you haven't known for a long time and shared experiences with. I just think, who well they're quite nice people, but I, I haven't got time to get involved or I don't particularly want to. … I just think people can't be bothered they'd rather continue with their friends and family".

Catherine (27), Female aged 70-74

6.5.2. Barton-on-Sea Built Environment

Barton-on-sea is also an attractive holiday destination with a long coastline to the South and the New Forrest to the North. Several participants highlighted that living in a desirable location enabled them to better keep in touch with their friends as it incentivised visitors.

"And then of course, the other bit is that because you live 300 yards away from the sea, you do tend to attract visitors. You know, nobody would have wanted to come and see us when we lived in [Place name], but, but Barton on Sea's a bit more attractive".

Paul (15), Male aged 65-69

The physical street scape of many of the houses in Barton-on-sea may also foster social interaction. Bungalows and detached houses predominate and are surrounded by gardens built onto quiet relatively traffic-free streets and cul-de-sacs. There is an abundance of green space, with the New Forrest and the coast that surrounds the town. This environment will have likely made it easier for residents to engage in conversations with their neighbours on their streets, and participants report doing so. Participants describe being able to engage in socially distanced interaction in the first pandemic, through long walks due to the abundance of green space. The interviews in this study were conducted just before the start of the second lockdown and several participants highlighted concerns that this would be more challenging as it was in the run up to Christmas and the weather would make meeting outside more difficult. A broader sense of community safety also allowed participants to walk and engage in their local community facilities without concern.

"This area is particularly good for walking because it's safe. The pavements are good. Yeah. Wide pavements, lots of lights. So, you could go out of a new thing, you feel safe. So, I think that's really important because if, if you're on a mobility scooter, or if you're elderly and you can't get out and you feel in danger, you feel scared of

what could happen then to be in this sort of area, I think is, is one of the bonuses. Yeah. So, I'm really glad that we sort of chose it here because you don't have to get in a car to go shopping it free. Every time you need something, you can walk and you can go out for drink and you can go for coffee and things like that.

Helen (18), Female aged 60-65

6.5.3. Clap for Carer's

In the first national lock-down many individuals and households across the country participated in a national campaign to show appreciation for the frontline NHS staff who continued to work to support the national COVID-19 pandemic response. People clapped outside their front doors at the same time every Thursday, inadvertently providing a unique opportunity for neighbourhood social interaction. When this unique weekly socialisation opportunity was combined with a general lack of social interaction due to the COVID-19 lock-down restrictions, many participants found previously relatively weak neighbourhood friends became stronger and more important for their wellbeing. These patterns were also seen following street parties held for VE day on the 8th of May shortly after this lock-down.

"I think it's bought a lot of them closer because when we have that clap for carers thing in the beginning, we formed the group this end of the street because we're in a close. And we were out the front all of us every Thursday. And by doing that, we'd ask how each other were and catch up on bits and pieces. Because you don't normally do that. I mean the English, aren't very good at socializing with their neighbours. We had a party for VE day, out the front. So, we had a social distance 1940s party. I just think you get to know them through that. What we also noticed was the people who didn't come out or the people that didn't ask after you. So yeah. That's, that's been interesting. … We genuinely got a lot out of it because I've realized what community is. And it's something you don't, you know, we take for granted really. You know, back to my mom and dad's guy, community was everything. It isn't so much now. … I think it will change going forward. We've already said we'll have a big party when this is finished. So hopefully we will. … I think that was a catalyst for everyone to start asking each other and paying attention to one another more than they would have done. … I just see it's given us some contact and it's given us something to almost mark on the calendar because it was one social event that you knew you could participate in. You couldn't do anything else. It was symbolic in one respect. And in the second, I suppose, in the second instance, it was a way of communicating with people. A way of seeing people".

Helen (18), Female aged 60-64

"In those awful days back in, you know, April in particular, when essentially the only socializing you did was when you stood outside on the Thursday evening and applauded the NHS, which I think is probably the best invention known to man in terms of, you know, social balance. They were also the people that were out there, and it was an opportunity to, to talk to people, even if you were shouting across the road. … But I think, I think that, you know, the lock-down probably, I, I don't know, certainly has accelerated that friendship made it more important than it might've been, because, you know, for, for quite significant chunks of time, they were really the only people you could talk to. I think, you know, in, in, in a different way. I mean, yeah, we now have known all of our neighbours within a dozen houses on both sides of the road, in both directions, which we probably would have never done before"

Paul (15), Male aged 65-69

6.6.   Conclusion

Friendship can be best seen as a broad category describing many different types of relationship, these range from the deeply intimate social connections that older adults keep through their life courses to the more fleeting interactions they may have with an acquaintance from the local pub or sport club. These can be depicted through three archetypes, core friendships peripheral friendships and associative friendships. Equality is a foundational feature of late life friendships. Compared to other relationship categories that may have in-built hierarchies or obligations, friendships are relationships built on voluntary interactions. This equality provides fertile ground for high levels of trust and open emotional disclosure. It also means that reciprocity is a key currency of late life friendship management. Certain friendship ties are found to change very little during the major disruption of the COVID-19 Pandemic, others are found to dissolve with little expectation of being restored, and others are renegotiated again. The COVID-19 Pandemic, in some cases, changed the transmissions of support between friends, altering the levels or trust and equality within the friendship for better and worse. In other cases, neighbourhood collective action initiatives (clap for carer) softened privacy boundaries between people to foster an increase in interaction and trust.

Friendships are both influenced by and exert influence on an older adults' wider social ties. A lack of close family can lead to the creation of 'kin-like' friendship bonds and living alone can make older adults more demanding of their friendships potentially making it more difficult to maintain friendship equality. For those living with a spouse and/or with close family networks, their friendships can provide a mechanism for the maintenance of these non-friendship-based ties. These friends can provide a space to vent negative emotions and/or concerns enabling them to gain perspective on relationship conflicts. Friendships also provide an outlet for the maintenance of multiple different interests and social roles as older adults

associate with varied types of friends to explore aspects of their personalities gaining great pleasure from these similarities.

Chapter Seven will continue to explore:

- The key results across all three research studies and the unique contribution that these results provide to the wider body of academic knowledge (7.2)
- The key research limitations across the thesis and recommendations for future research (7.3)
- The key policy recommendations from these results (7.4)

7. <u>Discussion</u>

7.1.   Introduction

This thesis is comprised of three distinct but interrelated research studies, the results of which are presented in chapters 4, 5 and 6. Together, these constitute a multi-method analysis of later life friendship. The first study involves the cross-sectional analysis of the relationship between friendship and wellbeing. The second study investigates the association between longitudinal transitions into a state of friendlessness and wellbeing. The third and final study contains the use of qualitative data to explore friendship change and its impact on wellbeing during the COVID-19 pandemic. Each of the three research studies employs a different methodology and addresses different research questions. Yet, the results, thesis wide, paint a picture of friendship in later life. It is worth reiterating that these research studies are not designed to triangulate a single research question and, as a result, should be primarily interpreted as distinct studies. This chapter aims to provide contextual and analytical depth rather than a robust synthesis of the research results.

This discussion chapter begins, in section 7.2, by drawing out three ideas that resonate across the results in all three thesis research studies. The first, explores the extent to which late-life friendships are of unique wellbeing value and/or dependent on an individual's wider social network. The second, examines the theories of socio-emotional selectivity and the importance of both emotionally intimate and non-emotionally intimate friendships in later life. The final, investigates friendship change and the capabilities, motivations, and social opportunity structures associated with these observed changes. See Chapter 2 for a more complete overview of the literature on these topics, section 7.3 for a discussion of the limitations of the thesis. Table 7.1 provides an overview of the research findings across each of the three research studies as a point of reference for the chapter. This chapter is followed by the thesis Conclusion and Appendices.

Table 7.1: Research questions and findings across all three research studies (Chapters Four, Five and Six)

Study	Research Question	Research Findings
Study One	How is the presence, nature, and number of an older person's (60+) non-residential friendship networks associated with their life satisfaction?	• The more friends an individual has the higher their odds of high wellbeing • The presence of a friendship network is more strongly associated with high wellbeing than the size of this friendship network
	How does this differ from familial social network and community social networks?	• The size of an older adult's friendship network is more strongly associated with high wellbeing than the size of their family or community network
	How does this relationship between an older person's non-residential friendship networks and their life satisfaction vary by household composition?	• Individuals in different household composition groups tend to hold friendship networks that are different in nature and size. The strength of the relationship between friendship size and wellbeing also varies between household compositions. • Older adults who live with a partner have larger friendship networks on average than those who live in other household composition groups. • Older adults who live with individuals who are not a partner, have on average smaller friendship networks than those living in other household composition groups. • Individuals who live alone and those who live with just individuals who are not their partner see their odds of high wellbeing increase more dramatically as their friendship network increases with size than those who live with a partner or a partner and other individuals. • Higher proportions of individuals who live with individuals who are not their partner report having familial friendship networks, when compared to individuals living in other household composition groups. • Higher proportions of individuals who live with a partner report that their friendship networks are like them in age, not familial and not geographically local than other household composition groups.
Study Two	What proportion of older adults in this sample report transitioning from having friends to not having friends across a six-year observation period?	• 3% (n=228) transitioned into friendlessness, 3% (n=184) transitioned out of friendlessness, across a six-year period. • Ninety-three per cent of the sample report having friends at both times point one and two meaning that transitions into or out of friendlessness are relatively uncommon experience in later life. Older adults are much more likely to sustain a friendship network than they are to transition into friendlessness and are more likely to transition out of friendlessness than they are to stay without friends.
	How this friendship network change compares to family and or community social network change?	• 71% (n=5,254) report having family members at both timepoint one and two, whereas only 39% (n=2,761) report being active in at least one community organisation at both time points. • 2,197 individuals report being not active in community organisations at both time point one and time point two, a larger sample proportion than those that report persistent family network absence or persistent friendlessness. Not only are there more individuals maintaining a lack of activity in community groups than those maintaining a lack of family or friendship networks, but those who are not active in community groups at time point one are more likely to gain a friend or family member than they are to become active in a community group.
	Is the loss of an older person's (60+) non-residential friendship network associated with a change in life satisfaction across a six-year time period?	• The presence of a within-individual transition from not having any friends to having friends is not significantly associated with a transition from low to high life satisfaction. • Those who experience a transition from not being active in a community organisation to becoming active in one or more community groups have 1.35 times greater odds of experiencing a transition from low to high wellbeing.

		• Gaining a family network is associated with increased odds of high wellbeing when time invariant factors are not controlled for but is not significant when between individual differences are controlled for.
Study Three	How do older adults describe their friendship networks?	• Descriptions of participant's friendships networks can be typified in to three friendship categories: core friendships, peripheral friendships, and associative friendships. These are distinguished from one another due to the structures in the friendship forms, and the level of trust and equality present in the relationship interactions.
	How do older adults describe the impact that these friendships have on their wellbeing?	• Friendships are described to impact the wellbeing of older adults through multiple mechanisms: emotional disclosure, emotional and instrumental support exchanges, identity construction through shared interests, and a deep reciprocity. • Not all friendships displayed all these mechanisms and not all these mechanisms had a positive wellbeing impact.
	How did the participants describe these friendships in the context of their wider social networks?	• Friendship is a flexible relationship category that can be adapted to be 'family-like' particularly when family networks are scarce but can also operate in public settings where individuals may interchangeably be called neighbours or 'activity' friends. • Individuals who live alone or with few social network contacts were described to occasionally cause a wellbeing burden on their friends due to the over-reliance on this one form of social network category with which to draw upon. • Participants describe how their friendships can provide a productive role in the maintenance of other social network contacts through both active relationship management and by providing an outlet for the negative emotions associated with relationship conflict.
	Did the participants describe experiencing any retrospective changes to their friendships because of the COVID-19 restrictions or otherwise	• Different friendship archetypes were associated with different patterns of change in response to the COVID-19 Pandemic. Core friendships are depicted as being most resilient to the COVID-19 triggers, whereas peripheral friendships and associative friendships are, in different circumstances, strengthened, weakened, and dissolved because of the COVID-19 pandemic.

7.2.   Thesis Key Themes

7.2.1.   Friendships and the Wider Social Network.

This thesis started with the hypothesis that late life friendship may not only be an under-researched social form but one of increasing importance for older adults due to several social and demographic trends. Yet, much of the existing literature adopts a whole network approach to capturing and quantifying social relationships. Using typologies and/or scales these prominent theories and studies measure the quality of all forms of social relationship around an individual rather than looking at certain relationship types (i.e., friendship or family) in isolation. The thesis results suggest there are wellbeing benefits unique to late life friendships. This perhaps justifies the focus on late life friendship in this and future research, but also justifies the development of policies and/or interventions to promote late life friendship (see section 7.4). However, the thesis results also highlight that the wellbeing benefits from a late life friendship are contingent on the individual's wider social networks. Suggesting the wellbeing impact of late life friendships are distinct but contingent on the other relationship for These results are described in greater detail below.

Throughout the thesis there are indications of the distinct impact that friendships can have on late life wellbeing. The first and third research study found that friends may be bound by their similarity/homophily and that this can allow for the expression of shared interests and reinforce a sense of collective belonging. In the third study some late life friendships provided a space to 'vent' or 'off-load' the emotional stresses that could accumulate from family or spousal relationships. This was described as a relationship benefit unique to friendship due to the equal and reciprocal nature of a friendship. This means that late life friendships occupy a critical place in supporting older adults to navigate relationship conflict and the challenges of growing older. In other circumstances, friendships provided a link to

early life memories gained from before their last living family had been born. Fiori's model highlights the unique role that friendships can play as an emotional support in later life. The unique wellbeing value of a late life friendship is corroborated in the first research study. Here, friendship is found to hold a greater association with life satisfaction than the number of family ties they have. The second research study also suggests that the value of a late life friendship may be distinct than other relationship forms. Participation in a community organisation is, for example, the only social relationship variable that held a significant association with wellbeing in both the cross-sectional and longitudinal models.

Despite these defining traits of equality, reciprocity, and trust being evident in discussions of late life friendship, several findings across the three thesis research studies also highlight that friendship is not a fixed social form but is responsive to changes in an individual's wider social network. The first research study highlights how the importance of an older adults' friendships for their wellbeing varied based on the social relationships in their wider household. For example, older adults who live alone with over 11 close friends have a 2.5 times increased odds of reporting high wellbeing than those who live alone with no friends. Yet, older adults who live with a partner and others and have over 11 close friends only have a 1.3 times increased odds of high wellbeing (and this result is not statistically significant). The third thesis research study both corroborates the wellbeing value of friendship for older adults in general, and specifically for those who live alone. Participants describe deliberately taking on additional supportive functions for their friends who live alone or are bereaved. They also describe how living alone can challenge the basis of equality, reciprocity, and trust between friends as an imbalance of needs can emerge. Participants in the third research study demonstrate the inter-relationships between the nature of friendship as a social form and an individual's wider social relationships most notable in their descriptions of the ways that an older adult's friendship can become a form of 'fictive kin' when that individual hold few biological kin ties. In all these examples, friendships take on a replacement or compensatory quality providing additional wellbeing support and value or encompassing non-friendship like qualities to compensate for the loss of other

social network ties. The next section continues to explore discussions around the
quantity and quality of social relationships in later life.

7.2.2.   The Power of a Single Core Friend

The body of existing literature has highlighted that larger (Fuller-Iglesias, 2015;
McLaughlin et al., 2011; Rafnsson et al., 2015), more proximal (Van der Pers et al.,
2015) networks that one interacts with frequently (Phongsavan et al., 2013) are
beneficial for wellbeing, and that it is the quality not quantity of people social
contacts that is of most critical importance to wellbeing. Laura Carstensen's socio-
emotional selectivity theory suggests that older adults may prioritise relationships
of deep emotional intimacy as they age, underscoring this value of quality rather
than quantity social ties.

The result in the first thesis study indicate that quantity does matter. The more
friends an individual has the higher their odds of high life satisfaction. However, the
results also support the wider research in suggesting that quantity is not the only
metric of importance. The first study finds that the transition from no friends to one
friend had a greater impact on one's wellbeing than any additional friend
thereafter, and the second research study highlights that the longer one holds a
friendship the more beneficial it may become to their wellbeing. The third study
highlights how 'core friendships' provide space for emotionally intimacy support
exchanges not described within other relationship forms or in 'less close'
friendships. These 'core friendships' were more were stable during the pandemic
than other friendship forms providing support for Carstensen's theories that the
most emotionally intimate relationships are prioritised and maintained in later life.

Yet, this thesis also highlights there are many ways that social relationships and
friendships can contribute to an individual's wellbeing in later life, and that these
are not necessarily borne from a deep emotional bond. Peripheral friendships are
found in the third study to provide space for individuals to explored shared

interests, gain hedonic wellbeing, receive instrumental support exchanges, and feel a sense of collective belonging. In the first two studies participation in community activities holds a strong association with wellbeing, and a transition out of community activity hold a significant longitudinal relationship with wellbeing where friendship loss does not. When participants describe neighbourhood or community participation, they do not mention deep emotionally intimate bonds but instead described the value of collective belonging, and activity maintenance.

7.2.3. Change and the COVID-19 Pandemic

The previous two sections draw out themes related to the association between friendships and the wellbeing of older adults. The thesis also, however, sheds light on the ways that these networks change, during a triggering moment such as the COVID-19 pandemic and across time. This is a vital contribution to the literature and is crucial in designing interventions to ensure older adults can build the friendship networks most beneficial to their wellbeing. Although the exact causal factors that lead to friendship change are not fully explored observations of the nature of this change generates useful suggestions about what resilient friendship networks might look like (see section 1.4.8 for a definition of resilience).

One of the key thesis findings is the difference in the stability of different types of social network tie. Research Study Two demonstrated that 92% of the analytical sample reported no change in whether they had friends or not across the six-year period. Whereas only 70% reported no change in whether they were active in a community organisation or not. This conjures an image of a community social network relationship that is both easier to gain and easier to lose, and a friendship network that is relatively harder to gain and harder to lose. Here, 'core friendships' were described as changing the least and being least vulnerable to loss but also the hardest relationships to form. In contrast, peripheral and then associative friendships are described as being increasingly easier to build, but less resilient during a social network trigger. This premise of weaker and then stronger ties,

varying in their relational resilience, firmly fits within the social convoy theory of social network change (Antonucci et al., 2013).

Building on this view of relational resilience there are also findings that suggest that a diversity of types of social network ties may be crucial for maintaining network resilience. This is particularly interesting in reference to the social network literature that has found that a diversity of ties is not connected to wellbeing (Rafnsson et al., 2015) and that people prefer friendships with people like themselves (Mcpherson and Smith-Lovin, 2001). The friendship changes observed in response to the COVID-19 pandemic are both specific to the nature of the COVID-19 restrictions but also specific to the friendship type in question. Group relationships that relied on face-to-face interactions in specific settings not compatible with the lockdown regulations particularly struggled, such as groups of car enthusiasts, pub drinkers, and dancers. Yet, groups such as golfers, neighbours, or dog-walkers, were sustained and in some cases flourished. Therefore, a diversity of types of friendship could, in theory, reduce an individual's chance of falling into friendlessness during a social network trigger such as the COVID-19 lockdown. This could look like a mixture of geographically close and distant ties, and/or a mixture of both 1:1 and group-mediated relationships.

This thesis explores the multifaceted roles and dynamics of late-life friendships and their implications for older adults' wellbeing. This discussion chapter highlights three interconnected ideas than span all three thesis research studies: the interaction between friendships and broader social networks, the unique significance of core friendships, and how friendships and friendship networks are or are not resilient during the COVID-19 pandemic. The next section continues to outline the limitations across the thesis research studies.

7.3. Research Limitations and Future Research Recommendations

This thesis, like all others, is not without its limitations. The use of a multi method design across the three research studies within the thesis does, however, uniquely allow for the mitigation of some of the methodological limitations of each study design in isolation. For example, the large sample analysed in studies one and two allows for the inclusion of 'hard-to-reach' demographic groups, such as those who live with individual(s) who are not a partner. This generates a broader and arguably more reliable understanding than that depicted in the small case study approach adopted in study three. Yet, the qualitative primary research techniques adopted in the third research study allow for a more nuanced understanding of the ways that individuals conceptualise, rationalise, and ultimately respond to the survey questions upon which the first two studies rely.

Despite the multi-method design it is important to highlight the limitations of each study independently. Table 7.2 provides a full list of identified limitations with corresponding recommendations for future research studies. Some of these directly question the findings and understanding that can be drawn from this research, yet others simply draw attention to the limits of the scope of the thesis project. The following subsections (7.3.1 to 7.3.3) then continue to take each study in turn and discuss in more depth the limitations that the author believes to be of the greatest importance. Section 7.3.4 discusses the extent to which analytical concepts used within the thesis, such as household composition, may have changed meaning during the pandemic and therefore during the research period. This questions the validity of the research and its utility for future research and policy recommendations. The final section (7.3.5) sets the scene for future lines of research enquiry.

Table 7.2: Summary of Thesis Limitations and Recommendations

Limitations	Recommendations
Individuals living within residential care settings are excluded from all three research studies.	Further research should explicitly explore the friendship formation processes within different residential living settings.
A binary version of the Satisfaction with Life Scale is used to capture subjective wellbeing.	Further research should compare these results across a variety of subjective wellbeing measures.
A four-category household composition variable is used to capture residential living arrangements.	Further research should explore the impact of alternative residential living arrangements of friendship networks, such as those 'living apart together' and those in 'household units' or 'residential bubbles' across multiple dwellings.
Data to suggest that household composition groups may correspond to life-stages and transitions is cross-sectional and therefore speculative.	Further research should be conducted to longitudinally track movements between household compositions and their association with other measures of life-stage.
The number of individuals that report a change in friendship size across the observation window (study 2) is small.	Further longitudinal quantitative research should be conducted with more observations over a long time-period, with more precise friendship metrics to better capture friendship network change. If a study had data points on identifiable friendship dyads researchers could analyse the presence of actual not aggregated friendship loss over time. As social interactions become increasingly digital, and therefore leave a data trail, new opportunities to track friendship change without relying on large social surveys will emerge.
Friendship network change is aggregated to total network size disguising changes in the composition of a friendship network.	Longitudinal qualitative research should be conducted to explore any discrepancies between anticipated friendship network change, retrospective friendship network change and actual friendship network change.
The discussions of friendship network change in study three are retrospective.	Further research should adopt longitudinal qualitative methodologies to examine the differences between perceived and actual friendship network change.
Participants did not include friendship network change within their convoy models.	A future research study could give participants three unique diagrams to complete for each time point, although this may come at the cost of activity clarity.
The convoy model diagramme was a discussion prompt and therefore not utilise as validated in other studies.	This limits the generalisability of the results. Future research should use the validated convoy model technique to see if there are any discrepancies.
The COVID-19 Pandemic is a unique global social period. The broader relevance of the conclusions drawn from this period may be limited.	Further research should be conducted that explores friendship network change in response to other social or life course triggers (such as the closure of a social service of voluntary provider, or bereavement) to explore the comparability of the data collected during the COVID-19 Pandemic.
This thesis is unable to fully explore why friendships change and how an individual is best able to prevent this change, only how they change.	Greater analysis of the contribution of macro-factors such as deprivation and discrimination as well as micro-factors such as individual social skills would add to the understanding displayed here and further inform the creation of policy interventions.
The third study only examines data from a small sample of individuals from a very specific community, see residential profile in Appendix Y	A second study could be conducted that compares the results in chapter three with data collected from other research locations that are different in terms of socio-economic advantage, resident demographic and physical geography.

7.3.1. Study One

Despite the deliberate choice to adopt a methodology that includes the analysis of large-scale representative sample populations, there are several sub-groups of older adults for which this thesis is invariably inadequate in representing. Individuals from minority ethnic communities, although included in larger number due to the minority ethnic boost sample, are not prevalent in Understanding

Society in sufficient quantities to be able to conduct meaningful analysis. A binary measure of nationality is included but ethnicity-based categorisations are not. Older adults living in residential communal establishments are excluded from the survey and therefore from the analysis. A simplistic picture of household and marital structure is captured in study one, meaning that the research has little ability to understand the nuanced experiences of those in nonmarital relationships such as those living apart together and/or those who have re-married or have multiple family units. Unfortunately, the exploration of these groups was not possible with the sample sizes in Understanding Society.

Study Three highlights the importance of personality and outlook as mediators for the impact of one's friendship network on their wellbeing. Psychological personality metrics were not included in Study One, potentially a significant limitation. Future research should explore the role of personality type as a mediator for friendship and wellbeing.

Future research should adopt the use of multiple wellbeing measures. This thesis has focussed on life satisfaction as the central measure of wellbeing, see section 1.4.4, however, greater depth of understanding could be achieved by comparing these results across hedonic, evaluative, and eudemonic wellbeing measures.

The third study also highlights how the neighbourhood-built environment and community cohesion could be important variables, however small area analysis was not included in study one. Multi-level models exploring the impact of neighbourhood level factors on the structures of late life friendship could be an informative contribution to the literature.

7.3.2. Study Two

The primary limitation in the second research study is that it is unable to capture actual friendship network size change. As individual friends are not given

identifiable codes in U-Soc, the study relies on changes in aggregated total network
size change. As the number of individuals that have a recorded change in total
friendship network size across the observation window is small, the power of the
statistical analyses is weak. It is highly probable that far greater actual friendship
change exists but is not captured by these measures.

7.3.3. Study Three

The third research study is centred on one community in southern England that has
specific demographics and geographies (see appendix V), therefore the findings
cannot be generalised beyond this context. Moreover, the participant accounts are
also retrospective rather than observed.

It is difficult to observe change during life course transitions because an accurate
understanding relies on data from before during and after the change in question
and it is often impossible to predict when these changes may occur. Large-scale
quantitative longitudinal surveys, like those utilised in studies one and two can
observe change by capturing data on individuals over a long period of time but are
unable to provide a detailed exploration of the thoughts and feelings of those
experiencing this change. Qualitative methods can provide this depth of insight, but
longitudinal qualitative methods are expensive and logistically difficult to conduct,
meaning that most qualitative research relies on retrospective accounts of these
life course transitions.

Retrospective accounts are unreliable and indirect, the present is contingent on
events in the past and yet our accounts of the past are contingent on the present
(McLeod and Thomson, 2009). This limits the generalisability of the research
findings, although arguably also provides greater insight into the aspects of
friendship nature change that hold greatest salience for the older adults involved in
the research (Bernard et al., 1984; Brewer, 2000). Authors have used historic
landmarks, events or even old photographs in a variety of attempts to increase the

reliability of retrospective accounts (Loftus and Marburger, 1983; Marin and Lin, 2020). The COVID-19 Pandemic arguably provides a 'cognitive anchor' for people to think about their retrospective friendships, in the same way that a photograph or landmark may do (*ibid*).

7.3.4. COVID-19 and the household

The validity of the findings in study three (and arguably throughout the thesis) are somewhat challenged by the nature of the fact that the research presented spans both a pre and post COVID-19 pandemic social reality. This is particularly demonstrated in the use of the term and concept, 'household composition'. Prior to the COVID-19 pandemic it was logical to develop a research study that examined changes in one's non-residential social networks by one's residential social ties (i.e. their household composition). Here household composition was simply understood to capture social relationships that involve cohabitation. Yet, the COVID-19 pandemic saw the notion of one's household composition develop new meanings and articulations (Trotter, 2021).

A 'household' became a legal entity. With this, individuals in one's residential social network were the only people that they could legally socialise with face-to-face. Early assumptions that one's natural social or support units would reflect their household compositions were challenged both politically and in academic research (Gulland, 2020). Yet, the importance of the household unit within the mandated lockdown restrictions is highly likely to have impacted the ways that individuals understand and conceptualise their households, and how they interact with those within and outside the household unit. This questions the continued validity of the results in the first two research studies in a post-pandemic reality.

By the time the third research study was conducted, the 'household support bubble' had been introduced into the lockdown restrictions. With this the COVID-19 pandemic has not only added additional meanings to residential social units but has led to the reification of a new household social form that transcends cohabitation. When the first two research studies were conducted there was neither the vocabulary to describe these relationships nor the means to measure them within Understanding Society. Participants in the third research study, articulate a diverse range of social ties that fit within this support bubble (such as pets, romantic partners, and grandchildren for which the older adult would look after). These relationships were marked by a deep intimacy characterised by routine familiarity and physical touch, not present in other forms of social relationship. Crucially although these groups were correlated with individuals who shared a household, they were not the same. With the hindsight of the COVID-19 pandemic the importance of this third category casts doubt over the validity over the original use of household composition as a category of social significance (Trotter, 2021). Future research should look to capture the prevalence of these forms and the extent to which they continue after the legacy of the COVID-19 pandemic.

7.3.5.   Future research directions

This thesis set out to explore the importance and nature of friendship in later life and its role on subjective wellbeing. This objective was underpinned by a hypothesis that wider demographic changes could have changed the importance and nature of late life friendship (Carr and Utz, 2020) and that friendship in later life was under researched in comparison with later life social isolation or social networks in general (Blieszner et al., 2019). The findings in the thesis, particularly those in the first study, both justify the thesis focus and attention on friendship and set the scene for future research exploring the importance of modern late life friendship. This subsection continues to outline three key avenues for future friendship research: the investigation of friendship network resilience across

different social network shocks; the investigation of friendship network resilience across different subgroups of older adults.

The thesis findings highlight the importance of friendship for wellbeing in later life, and the third study highlights how some of these relationships were disrupted during the COVID-19 Pandemic. Yet, this thesis is only able to explore friendship resilience during the COVID-19 pandemic, a social period that is unique in many regards. Future research should examine friendship network resilience (and the maintenance behaviours behind this resilience) across multiple social network shocks. These shocks could include but are not limited to residential relocation, experiences of bereavement or widowhood, health shocks and/or driving cessation. These shocks are likely to differ from the impact of the COVID-19 pandemic, not limited to the fact that the COVID-19 pandemic was unique in its universal impact across all actors within a network.

Following on from this line of research enquiry, further research should explore the variations in friendship maintenance and network and relational resilience among different sub-groups of older adults. A better understanding of ways that structural inequalities may influence the social opportunity structure, the capabilities, and the motivations of older adults in creating and sustaining resilient friendship networks will be crucial in reducing inequalities in wellbeing in later life. The third research study is only able to explore friendship resilience among a homogenous and socially advantaged group of older adults, yet the first research study highlights the variation in friendship forms and importance across sub-groups of older adults. The effective design of interventions to improve friendship network resilience in later life requires greater understanding of how these processes differ for different older adults. Some sub-groups that warrant investigation include those: living in different household compositions; with different family, community, and romantic networks; with different personality dispositions; with different ethnic and cultural backgrounds; with different socio-economic resources; and for men and women separately.

7.4.   Policy Recommendations and Interventions

The findings within the thesis are of little utility if they cannot be successfully applied to the creation of interventions and recommendations for policies that improve the social experiences of older adults and, thereby, improve their wellbeing. This section will outline recommendations for new approaches to policies and interventions to improve late life friendship networks built on the thesis findings. These centre on the following high-level points: that interventions (and the evaluation of these) need to be long term; that there needs to be interventions to help people gain their first friend not just to continue to build larger friendship networks and/or maintain friendship networks; that household composition is a useful tool with which to tailor friendship interventions; and that where other relationship forms rely on face to face interaction friendships can be sustained digitally, and that relational equality and wider community trust and cohesion could be good mechanisms for supporting late life friendship.

7.4.1.   Existing Intervention Approaches

Existing social isolation interventions vary greatly in the mechanisms that they seek to leverage to improve social relationships. Gardiner et al (2018) identify six types of social isolation intervention: social facilitation interventions, psychological therapies, health and social care provision, animal interventions, befriending interventions, and leisure/ skill development (Gardiner et al., 2018). Some of these interventions are direct, in that they aim to build immediate social connections, whereas others are indirect instead influencing the development of a broader environment that fosters social connection. Fitting with Fiori's theoretical model these interventions can be understood as either influencing the social opportunity structure, the capabilities and/or the motivations of the social actors (Fiori et al., 2020). A list of types of social isolation intervention with examples can be found in Table 7.3.

Table 7.3: Social isolation Intervention Categories and Examples

Behaviour Change Mechanism	Intervention Category	Explanation	Examples
Capability	Skills/resources - psychological	These are psychological or social interventions designed to improve the skills needed to engage in social behaviours. These may be individual or group interventions.	Humour Therapy – (Tse et al. 2010) Cognitive and Social Support Interventions – (Saito et al. 2012) Mindfulness and Stress Reduction – (Creswell et al 2012) The circle of friends (Jansson and Pitkälä, 2021)
Capability	Skills/resources - practical	These are products, services, or organisations that aim to equip older adults with the necessary resources/skills to utilise social devices. These may, for example, include digital skills and devices, or mobility devices.	Learn my Way - https://www.learnmyway.com/ BT Skills for Tomorrow - https://www.bt.com/skillsfortomorrow/ GIRDA - http://www.girda.eu/ Digital Champions Network - https://www.digitalchampionsnetwork.com/
Opportunity	Environment	These are products, services, or organisations that aim to improve the accessibility of neighbourhoods and transportation systems to prevent the exclusion of older adults for socialisation opportunities. This could include adapting existing environments such as through the age-friendly cities agenda or creating new environments such as in the creation of assisted living communities	WHO Age friendly cities and communities toolkit - https://www.decadeofhealthyageing.org/find-knowledge/support/toolkits/detail/let-s-go!-steps-for-engaging-older-people-and-improving-communities-for-all-ages Centre for Ageing Better UK Network of Age friendly Communities - https://ageing-better.org.uk/uk-network-age-friendly-communities
Opportunity	Reciprocal Relationship	These are products, services, or organisations that aim to bring people together around common interests or activities. These may be targeted at older adults or non-age specific.	Alzheimer's Society Dementia Café - https://www.alzheimers.org.uk/get-support/your-support-services/dementia-cafe Age of Creativity - https://www.ageofcreativity.co.uk/ Sport England and The British Red Cross - https://www.sportengland.org/news/community-connectors-tackling-loneliness-lockdown London Bubble - https://www.londonbubble.org.uk/parent_project/creative-elders-programme/
Opportunity	Non-reciprocal Relationship	These are products, services, or organisations that aim to connected isolated individuals with others that can provide support or companionship	Time to Talk Befriending - https://www.tttb.org.uk/ Call in Time Age UK Befriending Scheme- https://www.ageuk.org.uk/services/befriending-services/ Together Co - https://togetherco.org.uk/
Opportunity	Non-Human	These are products, services, or organisations that either aim to support people to connect with a pet or animal or support people to generate the wellbeing benefits of human connection from interaction with assistive devices.	HUG by Laugh - https://hug.world/ Precious Petz - https://www.precious-petzzz.co.uk/ Borrow my Doggy - https://www.borrowmydoggy.com/ Rosie's Trust - https://www.rosiestrust.org/
Opportunity	Referral	These are products, services, or organisations that aim to connect isolated individuals into active social isolation intervention programmes.	Joy - https://www.thejoyapp.com/ National Academy of Social Prescribing - https://socialprescribingacademy.org.uk/
Opportunity	Upstream Capacity-Building	These are products, services, or organisations that aim to equip or upskill the individuals delivering active social isolation interventions.	More Human - https://www.more-human.co.uk/ Connection Coalition - https://www.connectioncoalition.org.uk/

7.4.2. Long Term Interventions and Evaluations

The findings in this thesis highlight that late life friendships are a crucial relationship form in older adult's social networks. Not only adding unique wellbeing value but also flexibly compensating for and/or working to support the maintenance of other relationship forms. It is therefore important, not only that we ensure there are good policy recommendations and interventions to promote late life friendship but also that these are effectively evaluated.

There is evidence in the bivariate statistics in Study Two (see section 5.2.3) that the association between having a friendship network or not on life-satisfaction may grow the longer an individual sits in a state of friendlessness or friendfullness. This is reconfirmed in the findings in Study Three in which individuals spoke about the long-term maintenance of 'old friends' and the unique importance of these for their wellbeing. This finding implies that a long-term implementation and evaluation strategy for friendship based social isolation interventions may be necessary. A systematic review of social isolation and loneliness interventions by Poscia et al (2018) found the follow-up observation windows in studies evaluating social isolation interventions, however, ranged from just three weeks to two years (Poscia et al., 2018). The discrepancy between these short evaluation windows and the long-term patterns of friendship creation and maintenance pose a particular challenge to the credibility of our understanding about the most effective social isolation interventions.

7.4.3. Reducing Friendlessness

The thesis findings also suggest that the first friend one gains provides a greater wellbeing benefit than any friend gained thereafter. This provides additional scrutiny to social isolation interventions that support the 'socially active

lonely' rather than those with no friends (Rodríguez-Romero et al., 2021). Interventions that work to increase the number of friends an individual has rather than moving them out of friendlessness by supporting them to gain their first friend may have a smaller wellbeing effect.

7.4.4. Varying Interventions by Household Composition

The first thesis study highlights that the friendship structures that older adults have varied between four household compositions and that the importance of these friendship structures on their wellbeing are also contingent on their wider household composition. The utility of household composition for understanding late life friendship is echoed in the third research study when several participants articulated that they engaged with their friends who lived alone differently to those who were widowed and/or that they would. Household composition could prove to be a useful variable with which to identify at-risk groups and direct policy interventions and/or initiatives.

7.4.5. Digital Relationships and Interventions

Interventions designed to target loneliness and/or social isolation are increasingly centred on the promise of communication technologies (Burholt et al., 2023). Yet, a scoping review found that only 44% of studies (n=41) observed a significant effect on the social isolation of older people (Doring et al., 2022). In the third thesis study participants describe relying on the use of their mobile or landline phones to maintain communications with their friends and family members. This thesis suggests that relatively simple technologies are quite effective for the maintenance of friendship ties, in fact, several participants preferred audio to video call. The thesis also suggests that remote communication technologies can be a more effective relationship management tool for friendships than for other social network contacts. As these ties do not rely on physical touch

or non-verbal communication cues as much as other relationship forms than can be more easily maintain using long-distance remote communication devices. This suggests that initiatives and interventions to improve digital literacy and remote communications of older adults, should be targeted at late life friendships.

7.4.6. Equality, Trust and Community Cohesion

The findings in the third thesis study highlight that reciprocity and equality generate trust and emotional disclosure and that this brings unique wellbeing value to late life friendships. This would suggest that interventions that work to build equal relationships and leverage individual and community trust would be effective approaches. Following this logic, the reciprocal rather than the non-reciprocal interventions outlined in Table 7.2 are likely to be most effective. The third thesis study indicates that neighbourhood walkability and community safety can increase the sociability of the resident populations, supporting the delivery of interventions to improve the built environment. This study was conducted in one demographically specific neighbourhood. Further research on other neighbourhoods that may have lower levels of community trust would identify if friendship formation at the dyad level can be impacted by levels of trust and community cohesion at a neighbourhood level. It would be particularly informative to see how the 'clap for carers' initiative identified in the third thesis study as promoting community cohesion, was received in neighbourhoods with different social, demographic, and economic conditions.

7.5. Conclusion

This thesis is comprised of three distinct research studies on friendship in later life. This chapter highlights three high-level ideas/discussions that draw on the results in each of the three research studies. Despite a lack of focus on friendships specifically within the social network research this thesis suggests that friendships both bring a unique wellbeing benefit to older adults, and an adaptive benefit as they

compensate for wider social network losses. The thesis supports the wider literature in suggesting that a larger number of friends is beneficial for people's wellbeing, but that quantity is not the most important metric. The thesis highlights that a friendship network filled with diverse types of friendships, not only offers wellbeing benefits through a variety of mechanisms but also decreases the likelihood that a social network shock will lead to friendlessness. These findings suggest that social isolation interventions should be long-term, should focus on supporting people to gain their first friend as well as maintain long term relationships, should leverage the potential for remote communication technologies, should build relationships of trust and could using household composition or neighbourhood features as factors to identify those potentially at risk.

8. __Conclusion__

It is well documented that human connection plays an essential role in ensuring high wellbeing. Now, in the aftermath of the COVID-19 Pandemic, this has never been higher on the policy and research agenda (see section 1.2). In comparison with other periods of the life course, we know relatively little about the dynamics of social connection for the oldest members of society (60+). This is an important gap as increasingly greater proportions of the British population reach later life (United Nations, Department of Economic and Social Affairs, Population Division, 2019). This thesis adds to important existing debates around loneliness and social networks in later life by providing a detailed examination of one type of social connection – friendship. This focus specifically on friendship is an important contribution to the academic literature (Blieszner et al., 2019) and is justified due to the shift in other social network forms in later life such as household compositions and family networks (Carr and Utz, 2020).

Blieszner and Adam's work on understanding friendship draws attention to its complex and multifaceted nature (*ibid*). Friendship is not only a 'thing' (noun) with 'structures' that can be observed, but also a 'process' (verb) with actions that evolve from emotions and motivations. One can both have a friend and be a friend. This research also highlights that as friendship is not static but a changing form. Late life friendship, therefore, cannot be fully understood without observation of the **'**phases' of friendship change across time. The thesis has been designed to observe all three of these aspects of friendship.

The first thesis study explores six aspects of **friendship structure**, the presence of a close friendship network, the size of this close friendship network, the frequency of online interaction with this close friendship network, the similarity of an individual to their close friends in terms of education, ethnicity and income, the geographic proximity of an older adult's close friends, and lastly how many of their close friends are also family members (multiplexity). To capture **friendship phases** and

friendship change, the second thesis study explores the association between transitions out of friendlessness on transitions from low to high wellbeing across a six-year observation period. By leveraging the longitudinal panel data in Understanding Society, actual rather than retrospective change can be seen (Twisk, 2013), and fixed effects models can be fitted to capture within individual change across time (*ibid*). The third thesis study explores the **friendship processes** that sit behind these late life friendship structures and phases. An examination of friendship behaviours and the thoughts and feelings that surround these are explore through semi-structured interview techniques (Miles et al., 2014).

The thesis investigates friendship as a dynamic social form, examining how friendships are shaped by macro social events, and are formed in relation to family, community, and household social relationships. Throughout, a focus is maintained on identifying the friendship networks that contribute to high subjective wellbeing and those that are relationally resilient to external shocks, such as the COVID-19 Pandemic.

The results of the first study indicate that the more friends an individual has the higher their odds of high wellbeing. The presence of a friendship network, rather than the size of a friendship network, is more strongly associated with high wellbeing, and the size of an older adult's friendship network is more strongly associated with high wellbeing than the size of their family or community network. Individuals in different household composition groups tend to hold friendship networks that are different in nature, size, and have a different impact on their wellbeing. For example, when compared to other household composition groups, higher proportions of individuals who live with a partner report that their friendship networks are like them in age, not familial and geographically local. This group also reported having larger friendship networks on average than those who live in other household composition groups but reported the smallest wellbeing gains as the size of their friendship network increased. These findings provide crucial contributions

to the literature and insights in the development of effective interventions for friendlessness.

The results of the second study indicate that friendships networks are relatively consistent across time, with 49% (3,439) of all individuals reporting the same sized friendship networks at time point one and two. 26% (1,838) report an increase in friendship network size and 25% (1,779) report a decrease in friendship network size, suggesting that narratives of later life isolation may be overemphasised. In contrast, greater change was observed in family network size with 70% (5,168) reporting an increase in their family network size. A transition from the presence of one or more friends to no friends across a six-year period is not significantly associated with a transition from being satisfied with life to not being satisfied with life. Chapter five explores the reasons that this relationship may not have been observed.

The results of the third study highlight the distinct contributions of friendships to older adults' wellbeing, emphasizing their capacity to provide emotional intimacy, social belonging, and practical support. Friendships are found to have unique wellbeing benefits but also to act as compensatory relationships for those with fewer biological family ties, and to support the maintenance of non-friendship-based relationships. Three types of friendship are depicted, core, peripheral and associative are identified. Core friendships offered stability and deep emotional support, especially during challenging times such as the COVID-19 pandemic. At the same time, peripheral and associative friendships were found to play a critical role in promoting social engagement, community belonging, shared interests, and hedonic wellbeing. A combination of types of friendship was identified as the optimal approach for maintaining network resilience.

9. **Bibliography**

Adams, R.G., Blieszner, R., 1994. An Integrative Conceptual Framework for Friendship Research. J. Soc. Pers. Relatsh. 11, 163–184. https://doi.org/10.1177/0265407594112001

Adler, A., Seligman, M.E.P., 2016. Using wellbeing for public policy: Theory, measurement, and recommendations. Int. J. Wellbeing 6, 1–35. https://doi.org/DOI: https://doi.org/10.5502/ijw.v6i1.429

Ajrouch, K.J., Blandon, A.Y., Antonucci, T.C., 2005. Social networks among men and women: the effects of age and socioeconomic status. J Gerontol B Psychol Sci Soc Sci 60, S311–S317.

Allin, P., Hand, D.J., 2017. New statistics for old?-measuring the wellbeing of the UK. J. R. Stat. Soc. Ser. A Stat. Soc. 180, 3–43.

Allison, Paul, 2009. Fixed Effects Regression Models, Quantitative Applications in the Social Sciences. SAGE.

Amati, V., Meggiolaro, S., Rivellini, G., Zaccarin, S., 2018. Social relations and life satisfaction: the role of friends. Genus 74. https://doi.org/10.1186/s41118-018-0032-z

Antonucci, T.C., Ajrouch, K., Birditt, K., 2013. The Convoy Model: Explaining Social Relations From a Multidisciplinary Perspective. The Gerontologist 54, 82–92.

Aristotle, 2004. The Nicomachean Ethics: Aristotle, Triskel Philosphy Series. Penguin Classics.

Atchley, R.C., 1989. A Continuity Theory of Normal Aging. Gerontologist 29, 183–190. https://doi.org/10.1093/geront/29.2.183

Atkins, J.L., Masoli, J.A.H., Delgado, J., Pilling, L.C., Kuo, C.-L., Kuchel, G.A., Melzer, D., 2020. Preexisting Comorbidities Predicting COVID-19 and Mortality in the UK Biobank Community Cohort. J. Gerontol. Ser. A 75, 2224–2230. https://doi.org/10.1093/gerona/glaa183

Baeriswyl, M., Oris, M., 2022. Friendship in Later Life: Thirty Years of Progress and Inequalities. Int. J. Aging Hum. Dev. 00914150221092991. https://doi.org/10.1177/00914150221092991

Baker, C., 2024. Constituency data: broadband coverage and speeds.

Banks, J., Xu, X., 2020. The mental health effects of the first two months of lockdown and social distancing during the Covid-19 pandemic in the UK (Working Paper No. W20/16). IFS Working Papers. https://doi.org/10.1920/wp.ifs.2020.1620

Barreto, M., Victor, C., Hammond, C., Eccles, A., Richins, M.T., Qualter, P., 2021. Loneliness around the world: Age, gender, and cultural differences in loneliness. Personal. Individ. Differ., Celebrating 40th anniversary of the journal in 2020 169, 110066. https://doi.org/10.1016/j.paid.2020.110066

Barrett, A.E., 2005. Gendered experiences in midlife: Implications for age identity. J. Aging Stud. 19, 163–183. https://doi.org/10.1016/j.jaging.2004.05.002

Barrett, A.E., Montepare, J.M., 2015. "It's About Time" Applying Life Span and Life Course Perspectives to the Study of Subjective Age. Annu. Rev. Gerontol. Geriatr. Vol 35 Subj. Aging New Dev. Future Dir. 35, 55–77. https://doi.org/10.1891/0198-8794.35.55

Baxter, J., Shetterly, S.M., Eby, C., Mason, L., Cortese, C.F., Hamman, R.F., 1998. Social network factors associated with perceived quality of life - The San Luis Valley Health and Aging Study. J. Aging Health 10, 287–310. https://doi.org/10.1177/089826439801000302

Bergman, M.M., 2011. Advances in Mixed Methods Research: Theories and Applications, 1st ed. SAGE Publications.

Berkman, L.F., Syme, S.L., 1979. Social Networks, Host Resistance, and Mortality: A Nine-Year Follow-up Study of Alameda County Residents. Am. J. Epidemiol. 185, 1070–1088. https://doi.org/10.1093/aje/kwx103

Bernard, H.R., Killworth, P., Kronenfeld, D., Sailer, L., 1984. The Problem of Informant Accuracy: The Validity of Retrospective Data. Annu. Rev. Anthropol. 13, 495–517. https://doi.org/10.1146/annurev.an.13.100184.002431

Bernard, M., Liddle, J., Bartlam, B., Scharf, T., Sim, J., 2012. Then and now: evolving community in the context of a retirement village. Ageing Soc. https://doi.org/10.1017/S0144686X11000079

Bernard, M., Ray, M., Reynolds, J., 2020. The Evolution of British Gerontology: Personal Perspectives and Historical Developments, 1st ed. Bristol University Press. https://doi.org/10.46692/9781447343110

Blackall, M., 2020. Boris Johnson announces four-week national Covid lockdown in England. The Guardian.

Blanchflower, D., Bryson, A., 2023. The Gender Well-being Gap. Natl. Bur. Econ. Res., WORKING PAPER 31212. https://doi.org/DOI 10.3386/w31212

Blanchflower, D., Bryson, A., 2022. The Female Happiness Paradox. Natl. Bur. Econ. Res., WORKING PAPER 29893. https://doi.org/DOI 10.3386/w29893

Blanchflower, D., Oswald, J.A., 2008. Is well-being U-shaped over the life cycle? Soc. Sci. Med. 66, 1733–49. https://doi.org/doi: 10.1016/j.socscimed.2008.01.030.

Blieszner, R., Adams, R., 1992. Adult Friendship, SAGE series on Close Relationships. SAGE Publications.

Blieszner, R., Ogletree, A.M., Adams, R.G., 2019. Friendship in Later Life: A Research Agenda. Innov. Aging 3. https://doi.org/10.1093/geroni/igz005

Block, P., Grund, T., 2014. Multidimensional Homophily in Friendship Networks. Netw. Sci. Camb. Univ. Press 2, 189–212. https://doi.org/10.1017/nws.2014.17

Bowling, A., 2005. Mode of questionnaire administration can have serious effects on data quality. J. Public Health 27, 281–291. https://doi.org/10.1093/pubmed/fdi031

Bowling, A., 1991. Social Support and Social Networks - Their Relationship to the Successful and Unsuccessful Survival of Elderly People in the Community - an Analysis of Concepts and a Review of the Evidence. Fam. Pract. 8, 68–83. https://doi.org/10.1093/fampra/8.1.68

Brewer, D.D., 2000. Forgetting in the recall-based elicitation of personal and social networks. Soc. Netw. 22, 29–43. https://doi.org/10.1016/S0378-8733(99)00017-9

Brewer, G., Robinson, S., Sumra, A., Tatsi, E., Gire, N., 2015. The Influence of Religious Coping and Religious Social Support on Health Behaviour, Health

Status and Health Attitudes in a British Christian Sample. J. Relig. Health 54, 2225–2234. https://doi.org/10.1007/s10943-014-9966-4

Brickman, P., Campbell, D.T., 1971. Hedonic relativism and planning the good society, in: Adaptation Level Theory: A Symposium. Academic Press, New York, pp. 287–302.

Brickman, P., Coates, D., Janoff-Bulman, R., 1978. Lottery winners and accident victims: Is happiness relative? J. Pers. Soc. Psychol. 36, 917–927. https://doi.org/10.1037/0022-3514.36.8.917

Bruine de Bruin, W., 2021. Age Differences in COVID-19 Risk Perceptions and Mental Health: Evidence From a National U.S. Survey Conducted in March 2020. J. Gerontol. Ser. B 76, e24–e29. https://doi.org/10.1093/geronb/gbaa074

Burholt, V., 2023. Culture, social isolation and loneliness in later life, in: Loneliness and Social Isolation in Old Age. pp. 50–60.

Cable, N., Bartley, M., Chandola, T., Sacker, A., 2013. Friends are equally important to men and women, but family matters more for men's well-being. J. Epidemiol. Community Health 67, 166–171. https://doi.org/10.1136/jech-2012-201113

Calman, L., Brunton, L., Molassiotis, A., 2013. Developing longitudinal qualitative designs: lessons learned and recommendations for health services research. BMC Med. Res. Methodol. 13, 14. https://doi.org/10.1186/1471-2288-13-14

Carr, D., Utz, R.L., 2020. Families in Later Life: A Decade in Review. J. Marriage Fam. 82, 346–363. https://doi.org/10.1111/jomf.12609

Carstensen, L.L., Fung, H.H., Charles, S.T., 2003. Socioemotional selectivity theory and the regulation of emotion in the second half of life. Motiv. Emot. 27, 103–123. https://doi.org/10.1023/A:1024569803230

Carstensen, L.L., Isaacowitz, D.M., Charles, S.T., 1999. Taking time seriously: A theory of socioemotional selectivity. Am. Psychol. 54, 165–181. https://doi.org/10.1037/0003-066X.54.3.165

CDRC Residential Mobility Index | CDRC Data [WWW Document], n.d. URL https://data.cdrc.ac.uk/dataset/cdrc-residential-mobility-index (accessed 6.16.24).

Centre for Ageing Better, 2024. Counting the Cost: The case for making older people's homes safe.

Centre for Ageing Better, 2023. Age-friendly Movement [WWW Document]. Age Friendly Mov. URL https://ageing-better.org.uk/age-friendly-movement (accessed 5.22.23).

Chappell, N., Hollander, M., Havens, B., Miller, J.A., McWilliam, C., 2004. The comparative costs of home care and residential care. The Gerontologist 44, 389–400.

Charles, S., Carstensen, L.L., 2010. Social and Emotional Aging. Annu. Rev. Psychol. 61, 383–409. https://doi.org/10.1146/annurev.psych.093008.100448

Chen, D.T.-H., Wang, Y.-J., 2021. Inequality-Related Health and Social Factors and Their Impact on Well-Being during the COVID-19 Pandemic: Findings from a National Survey in the UK. Int. J. Environ. Res. Public. Health 18, 1014. https://doi.org/10.3390/ijerph18031014

Cheng, S.-T., Lam, L.C.W., Kwok, T., Ng, N.S.S., Fung, A.W.T., 2013. The Social Networks of Hong Kong Chinese Family Caregivers of Alzheimer's Disease: Correlates With Positive Gains and Burden. The Gerontologist 53, 998–1008. https://doi.org/10.1093/geront/gns195

Classifying the Older Population | CDRC Data [WWW Document], n.d. URL https://data.cdrc.ac.uk/stories/classifying-older-population (accessed 6.16.24).

Cornwell, B., 2015. Social Disadvantage and Network Turnover. J. Gerontol. Ser. B 70, 132–142. https://doi.org/10.1093/geronb/gbu078

Cornwell, B., 2011. Age Trends in Daily Social Contact Patterns. Res. Aging 33, 598–631. https://doi.org/10.1177/0164027511409442

Cornwell, B., Laumann, E.O., Schumm, L.P., 2008. The social Connectedness of Older Adults: A national Profile. Am. Sociol. Rev. 73, 185–203.

Coyle, C.E., Dugan, E., 2012. Social Isolation, Loneliness and Health Among Older Adults. J. Aging Health 24, 1346–1363. https://doi.org/10.1177/0898264312460275

Creswell, J., Plano Clark, V., 2018. Designing and Conducting Mixed Methods Research, Third. ed. SAGE.

Cruickshank, J., 2002. Critical Realism and Critical Philosophy. J. Crit. Realism 1, 49–66.

Cumming, E., Henry, W., 1961. Growing Old: The process of Disengagement. Basic Books, New York.

Dahlberg, L., 2020. Ageing in a changing place: a qualitative study of neighbourhood exclusion. Ageing Soc. 40, 2238–2256. https://doi.org/10.1017/S0144686X1900045X

Dannefer, D., 2003. Cumulative Advantage/Disadvantage and the Life Course: Cross-Fertilizing Age and Social Science Theory. J. Gerontol. Ser. B 58, S327–S337. https://doi.org/10.1093/geronb/58.6.S327

Dannefer, D., Phillipson, C., 2010. Preface, in: Sage Handbook of Social Gerontology.

Dare, J., Wilkinson, C., Donovan, R., Lo, J., McDermott, M.-L., O'Sullivan, H., Marquis, R., 2019. Guidance for Research on Social Isolation, Loneliness, and Participation Among Older People: Lessons From a Mixed Methods Study. Int. J. Qual. Methods 18, 1609406919872914. https://doi.org/10.1177/1609406919872914

Davies, N., Walker, N., Hopwood, J., Iliffe, S., Rait, G., Walters, K., 2019. A "separation of worlds": The support and social networks of family carers of people with dementia at the end of life, and the possible role of the internet. Health Soc. Care Community 27, e223–e232. https://doi.org/10.1111/hsc.12701

Della Giusta, M., Jewell, S.L., Kambhampati, U.S., 2011. Gender and Life Satisfaction in the UK. Fem. Econ. 17, 1–34. https://doi.org/10.1080/13545701.2011.582028

Department for Digital, Culture, Media and Sport (DCMS), 2021a. Emerging Together: the Tackling Loneliness Network Action Plan [WWW Document]. GOV.UK. URL https://www.gov.uk/government/publications/emerging-together-the-tackling-loneliness-network-action-plan/emerging-together-the-tackling-loneliness-network-action-plan (accessed 11.8.21).

Department for Digital, Culture, Media and Sport (DCMS), 2021b. Government's
        work on tackling loneliness [WWW Document]. GOV.UK. URL
        https://www.gov.uk/government/collections/governments-work-on-
        tackling-loneliness (accessed 11.8.21).
Department for Digital, Culture, Media and Sport (DCMS), 2018. A connected
        society A strategy for tackling loneliness – laying the foundations for change.
        Department for Digital, Media, Culture and Sport, British Government.
Department for Digital, Culture, Media and Sport (DCMS), Office for Civil Society,
        Mims Davies MP, 2019. Let's Talk Loneliness campaign launched to tackle
        stigma of feeling alone [WWW Document]. URL
        https://www.gov.uk/government/news/lets-talk-loneliness-campaign-
        launched-to-tackle-stigma-of-feeling-alone (accessed 11.8.21).
Department for Health and Social Care, UK Health Security Agency (UKHSA), 2020.
        COVID-19: guidance on protecting people defined on medical grounds as
        extremely vulnerable [WWW Document]. GOV.UK. URL
        https://www.gov.uk/government/publications/guidance-on-shielding-and-
        protecting-extremely-vulnerable-persons-from-covid-19 (accessed
        11.29.21).
Diener, E., Emmons, R.A., Larsen, R.J., Griffin, S., 1985. The Satisfaction with Life
        Scale. J. Pers. Assess. 49, 71–75.
        https://doi.org/10.1207/s15327752jpa4901_13
Diener, E., Lucas, R.E., Scollon, C.N., 2006. Beyond the hedonic treadmill: Revising
        the adaptation theory of well-being. Am. Psychol. 61, 305.
        https://doi.org/10.1037/0003-066X.61.4.305
Duncan, S., Phillips, M., Carter, J., Roseneil, S., Stoilova, M., 2014. Practices and
        perceptions of living apart together. Fam. Sci. 5, 1–10.
        https://doi.org/10.1080/19424620.2014.927382
Easterlin, R., 2003. Building a Better Theory of Well-being.
        http://dx.doi.org/10.2139/ssrn.392043
English, T., Carstensen, L.L., 2014. Selective Narrowing of Social Networks Across
        Adulthood is Associated with Improved Emotional Experience in Daily Life.
        Int. J. Behav. Dev. 38, 195–202.
Etheridge, B., Spantig, L., 2020. The gender gap in mental well-being during the
        Covid-19 outbreak: Evidence from the UK (Working Paper No. 2020– 08).
        ISER Working Paper Series.
Eurofound, 2019. Quality of Life: Household Composition and well-being.
        Publications Office of the European Union, Luxemborg.
Evans, S., 2009. 'That lot up there and us down here': social interaction and a sense
        of community in a mixed tenure UK retirement village. Ageing Soc. 29, 199–
        216. https://doi.org/10.1017/S0144686X08007678
Exploring local income deprivation [WWW Document], n.d. URL
        https://www.ons.gov.uk/visualisations/dvc1371/ (accessed 6.16.24).
Fancourt, D., Steptoe, A., 2018a. Community group membership and
        multidimensional subjective well-being in older age. J Epidemiol Community
        Health 72, 376–382. https://doi.org/10.1136/jech-2017-210260
Fancourt, D., Steptoe, A., 2018b. Cultural engagement predicts changes in cognitive
        function in older adults over a 10 year period: findings from the English

Longitudinal Study of Ageing. Sci. Rep. 8, 10226.
https://doi.org/10.1038/s41598-018-28591-8

Fiori, K., Windsor, T., Huxhold, O., 2020. The Increasing Importance of Friendship in
Late Life: Understanding the Role of Sociohistorical Context in Social
Development. Gerontology 66, 286–294.
https://doi.org/10.1159/000505547

Fischer, C.S., 1982. To dwell among friends : personal networks in town and city.
University of Chicago Press, Chicago.

Fischer, C.S., Offer, S., 2020. Who is dropped and why? Methodological and
substantive accounts for network loss. Soc. Netw. 61, 78–86.
https://doi.org/10.1016/j.socnet.2019.08.008

Fried, L., Prohaska, T., Burholt, V., Burns, A., Golden, J., Hawkley, L., Lawlor, B.,
Leavey, G., Lubben, J., O'Sullivan, R., Perissinotto, C., Tilburg, T. van, Tully,
M., Victor, C., 2020. A unified approach to loneliness. The Lancet 395, 114.
https://doi.org/10.1016/S0140-6736(19)32533-4

Fuller-Iglesias, H.R., 2015. Social ties and psychological well-being in late life: the
mediating role of relationship satisfaction. Aging Ment. Health 19, 1103–
1112. https://doi.org/10.1080/13607863.2014.1003285

Giebel, C., Lord, K., Cooper, C., Shenton, J., Cannon, J., Pulford, D., Shaw, L.,
Gaughan, A., Tetlow, H., Butchard, S., Limbert, S., Callaghan, S., Whittington,
R., Rogers, C., Komuravelli, A., Rajagopal, M., Eley, R., Watkins, C., Downs,
M., Reilly, S., Ward, K., Corcoran, R., Bennett, K., Gabbay, M., 2021. A UK
survey of COVID-19 related social support closures and their effects on older
people, people with dementia, and carers. Int. J. Geriatr. Psychiatry 36, 393–
402. https://doi.org/10.1002/gps.5434

Gierveld, de jong, Tilberg, V., Dykstra, P.A., 2006. loneliness and Social isolation, in:
Perlman, D., Vangelisti, A. (Eds.), The Cambridge Handbook of Personal
Relationships. Cambridge.

Gilleard, C., Hyde, M., Higgs, P., 2007. The Impact of Age, Place, Aging in Place, and
Attachment to Place on the Well-Being of the Over 50s in England. Res.
Aging 29, 590–605. https://doi.org/10.1177/0164027507305730

Gillespie, B., Fokkema, T., 2023. Life Events, Social Conditions, and Residential
Mobility Among Older Adults. https://doi.org/10.1002/psp.2706

Goffman, E., 2021. The Presentation of Self in Everyday Life. Knopf Doubleday
Publishing Group.

Golden, J., Conroy, R., Bruce, I., Denihan, A., Greene, E., M., K., Brain, Lawlor., 2009.
Loneliness, social support networks, mood and wellbeing in community-
dwelling elderly. Interntional J. Geriatr. Psychiatry 24, 694–700.

Graham, Allan, 2010. Friendship and Ageing, in: The Sage Handbook of Social
Gerontology. SAGE Publications, pp. 239–247.

Granovetter, M.S., 1973. The Strength of Weak Ties. Am. J. Sociol. 78, 1360–1380.

Gray, N.S., O'Connor, C., Knowles, J., Pink, J., Simkiss, N.J., Williams, S.D., Snowden,
R.J., 2020. The Influence of the COVID-19 Pandemic on Mental Well-Being
and Psychological Distress: Impact Upon a Single Country. Front. Psychiatry
11, 594115. https://doi.org/10.3389/fpsyt.2020.594115

Griggs, A., Rickel, E., Lazzara, E., Frederick, C., 2021. Add Me as a Friend: Face to Face vs. Online Friendships and Implications for Happiness. Acad. Lett. https://doi.org/10.20935/AL3565

Gulland, J., 2020. Households, bubbles and hugging grandparents: Caring and lockdown rules during COVID-19. Fem. Leg. Stud. 28, 329–339. https://doi.org/10.1007/s10691-020-09445-z

Gwozdz, W., Sousa-Poza, A., 2009. Ageing, Health and Life Satisfaction of the Oldest Old: An Analysis for Germany. Inst. Study Labor IZA Discussion Paper No. 4053.

Hagestad, G.O., Uhlenberg, P., 2006. Should We Be Concerned About Age Segregation? Res. Aging 28, 638–653. https://doi.org/10.1177/0164027506291872

Hanna, K., Giebel, C., Tetlow, H., Ward, K., Shenton, J., Cannon, J., Komuravelli, A., Gaughan, A., Eley, R., Rogers, C., Rajagopal, M., Limbert, S., Callaghan, S., Whittington, R., Butchard, S., Shaw, L., Gabbay, M., 2021. Emotional and Mental Wellbeing Following COVID-19 Public Health Measures on People Living With Dementia and Carers. J. Geriatr. Psychiatry Neurol. 0891988721996816. https://doi.org/10.1177/0891988721996816

Harper, M.-G., Wellman, B., Quan-Haase, A., 2020. Older Adults and Information and Communication Technologies in the Global North. FIMS Publ.

Havighurst, R.J., Albrecht, R., 1953. Older People. New York: Longmans Green.

Hickman, Paul, 2013. "Third places" and social interaction in deprived neighbourhoods in Great Britain | SpringerLink. J. Hous. Built Environ. 221–236.

Hogan, B., Carrasco, J.A., Wellman, B., 2007. Visualizing Personal Networks: Working with Participant-aided Sociograms. Field Methods 19, 116–144. https://doi.org/10.1177/1525822X06298589

Holingue, C., Badillo-Goicoechea, E., Veldhuis, C., Thrul, J., Johnson, R., Fallin, D., Kreuter, F., Stuart, E., Kalb, L., 2020. Mental distress during the COVID-19 pandemic among US adults without a pre-existing mental health condition_ Findings from American trend panel survey | Elsevier Enhanced Reader. Prev. Med. 139. https://doi.org/10.1016/j.ypmed.2020.106231

Holt-Lunstad, J., Smith, T.B., Baker, M., Harris, T., Stephenson, D., 2015. Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review. Perspect. Psychol. Sci. 10, 227–237. https://doi.org/10.1177/1745691614568352

How life has changed in New Forest: Census 2021 [WWW Document], n.d. URL http://sveltekit-prerender/visualisations/censusareachanges/E07000091/ (accessed 6.15.24).

Huxhold, O., 2019. Gauging effects of historical differences on aging trajectories: The increasing importance of friendships. Psychol. Aging 34, 1170–1184. https://doi.org/10.1037/pag0000390

Huxhold, O., Miche, M., Schüz, B., 2014. Benefits of Having Friends in Older Ages: Differential Effects of Informal Social Activities on Well-Being in Middle-Aged and Older Adults. J. Gerontol. Ser. B 69, 366–375. https://doi.org/10.1093/geronb/gbt029

Johnson, B., 2020. Prime Minister's statement on coronavirus (COVID-19): 23 March
      2020 [WWW Document]. GOV.UK. URL
      https://www.gov.uk/government/speeches/pm-address-to-the-nation-on-
      coronavirus-23-march-2020 (accessed 11.26.21).

Kahn, R.L., Antonucci, T.C., 1980. Convoys Over the Life Course: Attachment Roles
      and Social Support, in: Baltes, P.B., Brim, O. (Eds.), Life-Span Development
      and Behaviour. Academic press, new York, pp. 253–286.

Kalmijn, M., 2012. Longitudinal analyses of the effects of age, marriage, and
      parenthood on social contacts and support. Adv. Life Course Res. 17, 177–
      190. https://doi.org/10.1016/j.alcr.2012.08.002

Kettlewell, N., Morris, R.W., Ho, N., Cobb-Clark, D.A., Cripps, S., Glozier, N., 2019.
      The differential impact of major life events on cognitive and affective
      wellbeing. SSM - Popul. Health 10, 100533.
      https://doi.org/10.1016/j.ssmph.2019.100533

Knies, G., 2016. Understanding Society The UK Household Longitudinal Study Waves
      1-6: User Guide.

Kööts–Ausmees, L., Realo, A., 2015. The Association between Life Satisfaction and
      Self–Reported Health Status in Europe. Eur. J. Personal. 29, 647–657.
      https://doi.org/10.1002/per.2037

Kotwal, A.A., Holt-Lunstad, J., Newmark, R.L., Cenzer, I., Smith, A.K., Covinsky, K.E.,
      Escueta, D.P., Lee, J.M., Perissinotto, C.M., 2021. Social Isolation and
      Loneliness Among San Francisco Bay Area Older Adults During the COVID-19
      Shelter-in-Place Orders. J. Am. Geriatr. Soc. 69, 20–29.
      https://doi.org/10.1111/jgs.16865

Kovacs, B., Caplan, N., Grob, S., King, M., 2021. Social Networks and Loneliness
      During the COVID-19 Pandemic. Socius 7, 2378023120985254.
      https://doi.org/10.1177/2378023120985254

Krause, N., Borawski-Clark, E., 1994. Clarifying the Functions of Social Support in
      Later Life. Res. Aging 16, 251–279.
      https://doi.org/10.1177/0164027594163002

Krendl, A.C., Perry, B.L., 2021. The Impact of Sheltering in Place During the COVID-
      19 Pandemic on Older Adults' Social and Mental Well-Being. J. Gerontol. Ser.
      B 76, e53–e58. https://doi.org/10.1093/geronb/gbaa110

Kulmala, J., Tiilikainen, E., Lisko, I., Ngandu, T., Kivipelto, M., Solomon, A., 2021.
      Personal Social Networks of Community-Dwelling Oldest Old During the
      Covid-19 Pandemic—A Qualitative Study. Front. Public Health 9, 770965.
      https://doi.org/10.3389/fpubh.2021.770965

Lazarfeld, PF., Merton, RK., 1954. Friendship as a social process: a substantive and
      methodological analysis, in: Berger, M., Abel, T., Page, CH. (Eds.), Freedom
      and Control in Modern Society. Van Nostrand, New York, pp. 18–66.

Lee, W.-S., Oguzoglu, U., 2007. Well-Being and Ill-Being: A Bivariate Panel Data
      Analysis (SSRN Scholarly Paper No. 1029914). Social Science Research
      Network, Rochester, NY. https://doi.org/10.2139/ssrn.1029914

Leedahl, S.N., Brasher, M.S., LoBuono, D.L., Wood, B.M., Estus, E.L., 2020. Reducing
      Ageism: Changes in Students' Attitudes after Participation in an
      Intergenerational Reverse Mentoring Program. Sustainability 12, 6870.
      https://doi.org/10.3390/su12176870

Leszczensky, L., Pink, S., 2019. What Drives Ethnic Homophily? A Relational
        Approach on How Ethnic Identification Moderates Preferences for Same-
        Ethnic Friends. Am. Sociol. Rev. 84, 394–419.
        https://doi.org/10.1177/0003122419846849
Lin, N., Woelfel, M., Light, S., 1985. The Buffering Effect of Social Support
        Subsequent to an Important Life Event. J. Health Soc. Behav. 26, 247–263.
Litwin, H., 2012. Physical activity, social network type, and depressive symptoms in
        late life: An analysis of data from the National Social Life, Health and Aging
        Project. Aging Ment. Health 16, 608–616.
        https://doi.org/10.1080/13607863.2011.644264
Litwin, H., 2001. Social Network Type and Morale in Old Age. The Gerontologist 41,
        516–524.
Loftus, E.F., Marburger, W., 1983. Since the eruption of Mt. St. Helens, has anyone
        beaten you up? Improving the accuracy of retrospective reports with
        landmarkevents. Mem. Cognit. 11, 114–120.
        https://doi.org/10.3758/BF03213465
Longhi, S., 2014. Cultural Diversity and Subjective Wellbeing. IZA J. Migr. 3.
        https://doi.org/10.1186/2193-9039-3-13
Lopez Ulloa, B. F., B., Møller, V., Sousa-Poza, A., 2013. How Does Subjective Well-
        Being Evolve with Age? A Literature Review. J. Popul. Ageing 6, 227–246.
        https://doi.org/10.1007/s12062-013-9085-0
Louch, H., 2000. Personal network integration: transitivity and homophily in strong-
        tie relations. Soc. Netw. 22, 45–64. https://doi.org/10.1016/S0378-
        8733(00)00015-0
Lubben, J.E., 1988. Assessing social networks among elderly populations. Fam.
        Community Health 11, 42–52.
Manyena, S.B., 2006. The concept of resilience revisited. Disasters 30, 434–450.
        https://doi.org/10.1111/j.0361-3666.2006.00331.x
Marin, A., Lin, C., 2020. Noting the ties after tying the knot: Photo-based elicitation
        of retrospective personal network data. Netw. Sci. 8, 251–270.
        https://doi.org/10.1017/nws.2019.8
Marsden, P., 1987. Core Discussion Networks of Amercians. Am. Sociol. Rev. 52,
        122–131.
Marston, H.R., Genoe, R., Freeman, S., Kulczycki, C., Musselwhite, C., 2019. Older
        Adults' Perceptions of ICT: Main Findings from the Technology In Later Life
        (TILL) Study. Healthcare 7, 86. https://doi.org/10.3390/healthcare7030086
Masten, A.S., 2014. Global Perspectives on Resilience in Children and Youth. Child
        Dev. 85, 6–20. https://doi.org/10.1111/cdev.12205
McBride, M., 2001. Relative-income effects on subjective well-being in the cross-
        section. J. Econ. Behav. Organ., Subjective Well-Being and Economic Analysis
        45, 251–278. https://doi.org/10.1016/S0167-2681(01)00145-7
McDonald, S., Mair, C.A., 2010. Social Capital Across the Life Course: Age and
        Gendered Patterns of Network Resources. Sociol. Forum 25, 335–359.
        https://doi.org/10.1111/j.1573-7861.2010.01179.x
McKinlay, A.R., Fancourt, D., Burton, A., 2021. A qualitative study about the mental
        health and wellbeing of older adults in the UK during the COVID-19

pandemic. BMC Geriatr. 21, 439. https://doi.org/10.1186/s12877-021-02367-8

McLaughlin, D., Adams, J., Vagenas, D., Dobson, A., 2011. Factors which enhance or inhibit social support: a mixed-methods analysis of social networks in older women. Ageing Soc. 31, 18–33. https://doi.org/10.1017/S0144686x10000668

McLeod, J., Thomson, R., 2009. Researching Social Change: Qualitative Approaches, First. ed. SAGE Publications Ltd.

Mcpherson, M., Smith-Lovin, L., 2001. Birds of a Feather: Homophily in Social Networks. Annu. Rev. Sociol. 27.

Mellor, D., Stokes, M., Firth, L., Hayashi, Y., Cummins, R., 2008. Need for belonging, relationship satisfaction, loneliness, and life satisfaction. Personal. Individ. Differ. 45, 213–218. https://doi.org/10.1016/j.paid.2008.03.020

Miles, M.B., Huberman, A.M., Saldana, J., 2014. Qualitative Data Analysis. SAGE.

Mollenhorst, G., Volker, B., Flap, H., 2014. Changes in personal relationships: How social contexts affect the emergence and discontinuation of relationships. Soc. Netw. 37, 65–80. https://doi.org/10.1016/j.socnet.2013.12.003

Moreno-Agostino, D., Abad, F.J., Caballero, F.F., 2021. Evidence on the Bidirectional Relationship Between Health and Life Satisfaction in Older Adults. J. Happiness Stud. https://doi.org/10.1007/s10902-021-00462-6

Morgan, D., Neal, M., Carder, P., 1996. The Stability of Core and Peripheral Networks over time. Soc. Netw. 19, 9–25.

Morgan, D.J., Burholt, V., 2020a. Loneliness as a biographical disruption - theoretical implications for understanding changes in loneliness. J Gerontl B Psychol Sci Soc Sci. https://doi.org/doi10.1093/geronb/gbaa097

Morgan, D.J., Burholt, V., 2020b. Transitions in loneliness in later life: the role of social comparisons and coping strategies. Ageing Soc. 1–22. https://doi.org/10.1017/S0144686X20001634

Mullis, E.C., 2010. Confucius and Aristotle on the Goods of Friendship. Dao 9, 391–405. https://doi.org/10.1007/s11712-010-9185-y

Muñoz-Bermejo, L., Adsuar, J.C., Postigo-Mota, S., Casado-Verdejo, I., de Melo-Tavares, C.M., Garcia-Gordillo, M.Á., Pérez-Gómez, J., Carlos-Vivas, J., 2020. Relationship of Perceived Social Support with Mental Health in Older Caregivers. Int. J. Environ. Res. Public. Health 17, 3886. https://doi.org/10.3390/ijerph17113886

Nahemow, L., Lawton, M.P., 1975. Similarity and propinquity in friendship formation. J. Pers. Soc. Psychol. 32, 205–213. https://doi.org/10.1037/0022-3514.32.2.205

Netuveli, G., Wiggins, R.D., Hildon, Z., Montgomery, S.M., Blane, D., 2006. Quality of life at older ages: evidence from the English longitudinal study of aging (wave 1). J. Epidemiol. Community Health 60, 357–363. https://doi.org/10.1136/jech.2005.040071

New Economics Foundation, 2012. Measuring Well-being: A guide for practitioners. New Economics Foundation (NEF), Centre for Well-being.

New Zealand Government, 2021. Wellbeing Budget 2021 - Securing Our Recovery 121.

NHS Digital, 2021. Coronavirus Shielded Patient List open data set, England [WWW Document]. NHS Digit. URL https://digital.nhs.uk/dashboards/shielded-patient-list-open-data-set (accessed 12.6.21).

NHS England » What is a virtual ward? [WWW Document], n.d. URL https://www.england.nhs.uk/virtual-wards/what-is-a-virtual-ward/ (accessed 6.15.24).

NOMIS, 2021. 2021 Census Profile for areas in England and Wales [WWW Document]. URL https://www.nomisweb.co.uk/sources/census_2021/report?compare=E050 04581 (accessed 6.16.24).

Noone, C., McSharry, J., Smalle, M., Burns, A., Dwan, K., Devane, D., Morrissey, E.C., 2020. Video calls for reducing social isolation and loneliness in older people: a rapid review. Cochrane Database Syst. Rev. 5, CD013632. https://doi.org/10.1002/14651858.CD013632

Ochieng, B.M.N., 2011. The effect of kin, social network and neighbourhood support on individual well-being. Health Soc. Care Community 19, 429–437. https://doi.org/10.1111/j.1365-2524.2011.00992.x

O'Dare, C.E., Timonen, V., Conlon, C., 2021. "Doing" Intergenerational Friendship: Challenging the Dominance of Age Homophily in Friendship. Can. J. Aging Rev. Can. Vieil. 40, 68–81. https://doi.org/10.1017/S0714980819000618

OECD, 2020. How's Life? 2020: Measuring Well-being. OECD, Paris.

OECD, 2013. OECD Guidelines on Measuring Subjective Well-being. OECD Publishing, Paris. https://doi.org/10.1787/9789264191655

Ofcom, 2022. Adults' Media Use and Attitudes report.

Office for National Statistics (ONS), 2024a. Explore local statistics [WWW Document]. URL https://explore-local-statistics.beta.ons.gov.uk/ (accessed 6.15.24).

Office for National Statistics (ONS), 2024b. Housing prices in New Forest [WWW Document]. URL https://www.ons.gov.uk/visualisations/housingpriceslocal (accessed 6.16.24).

Office for National Statistics (ONS), 2024c. Crime in England and Wales: Police Force Area data tables [WWW Document]. URL https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/datasets/policeforceareadatatables (accessed 6.15.24).

Office for National Statistics (ONS), 2024d. Internet users [WWW Document]. URL https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/datasets/internetusers (accessed 6.15.24).

Office for National Statistics (ONS), 2023a. Age groups [WWW Document]. Ethn. Facts Fig. URL https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/demographics/age-groups/latest (accessed 3.27.23).

Office for National Statistics (ONS), 2023b. How health has changed in your area [WWW Document]. URL https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandwellbeing/articles/howhealthhaschangedinyourarea2015to2021/2023-06-16#E07000091 (accessed 6.16.24).

Office for National Statistics (ONS), 2022a. Families and households in the UK
    [WWW Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsand
    marriages/families/bulletins/familiesandhouseholds/latest (accessed
    11.28.22).
Office for National Statistics (ONS), 2022b. Personal well-being in the UK: April 2021
    - March 2022 [WWW Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulleti
    ns/measuringnationalwellbeing/april2021tomarch2022 (accessed 12.18.22).
Office for National Statistics (ONS), 2022c. Household total wealth in Great Britain:
    April 2018 - March 2020 [WWW Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhous
    eholdfinances/incomeandwealth/bulletins/totalwealthingreatbritain/april20
    18tomarch2020 (accessed 12.18.22).
Office for National Statistics (ONS), 2022d. Social capital in the UK: April 2020 to
    March 2021 [WWW Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulleti
    ns/socialcapitalintheuk/april2020tomarch2021 (accessed 10.15.22).
Office for National Statistics (ONS), 2022e. Annual personal well-being estimates
    [WWW Document]. Annu. Pers. Well- Estim. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/datase
    ts/headlineestimatesofpersonalwellbeing (accessed 3.6.23).
Office for National Statistics (ONS), 2021a. Families and households in the UK: 2020
    [WWW Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsand
    marriages/families/bulletins/familiesandhouseholds/2020 (accessed
    11.8.21).
Office for National Statistics (ONS), 2021b. Health state life expectancies by national
    deprivation deciles, England: 2017 - 2019 [WWW Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialc
    are/healthinequalities/bulletins/healthstatelifeexpectanciesbyindexofmultip
    ledeprivationimd/2017to2019 (accessed 5.20.22).
Office for National Statistics (ONS), 2021c. Living longer: Older workers during the
    (COVID-19) Pandemic [WWW Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsand
    marriages/ageing/articles/livinglonger/olderworkersduringthecovid19pande
    mic (accessed 12.18.22).
Office for National Statistics (ONS), 2021d. Internet users, UK: 2020 [WWW
    Document]. URL
    https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/b
    ulletins/internetusers/2020 (accessed 3.27.23).
Office for National Statistics (ONS), 2020. Births in England and Wales [WWW
    Document]. URL
    https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsand
    marriages/livebirths/bulletins/birthsummarytablesenglandandwales/2020
    (accessed 11.8.21).

Office for National Statistics (ONS), 2019a. The cost of living alone [WWW
        Document]. URL
        https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsand
        marriages/families/articles/thecostoflivingalone/latest (accessed 11.15.21).
Office for National Statistics (ONS), 2019b. Personal and economic well-being: what
        matters most to our life satisfaction? [WWW Document]. URL
        https://www.ons.gov.uk/releases/howsatisfiedareyouwithyourlife
Office for National Statistics (ONS), 2019c. Exploring the UK's digital divide [WWW
        Document]. URL
        https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharac
        teristics/homeinternetandsocialmediausage/articles/exploringtheuksdigital
        divide/2019-03-04 (accessed 3.27.23).
Office for National Statistics (ONS), 2019d. Families and households [WWW
        Document]. UK Popul. Ethn. URL https://www.ethnicity-facts-
        figures.service.gov.uk/uk-population-by-ethnicity/demographics/families-
        and-households/latest#full-page-history (accessed 6.20.23).
Office for National Statistics (ONS), 2018. Marriages in England and Wales [WWW
        Document]. URL
        https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsand
        marriages/marriagecohabitationandcivilpartnerships/bulletins/marriagesine
        nglandandwalesprovisional/2018 (accessed 11.8.21).
O'Suilleabhain, P.S., Gallagher, S., Steptoe, A., 2019. Loneliness, Living Alone, and
        All-Cause Mortality: The Role of Emotional and Social Loneliness in the
        Elderly During 19 Years of Follow-Up. Psychosom. Med. 81, 521–526.
        https://doi.org/10.1097/Psy.0000000000000710
O'Sullivan, R., Burns, A., Leavey, G., Leroi, I., Burholt, V., Lubben, J., Holt-Lunstad, J.,
        Victor, C., Lawlor, B., Vilar-Compte, M., Perissinotto, C.M., Tully, M.A.,
        Sullivan, M.P., Rosato, M., Power, J.M., Tiilikainen, E., Prohaska, T.R., 2021.
        Impact of the COVID-19 Pandemic on Loneliness and Social Isolation: A
        Multi-Country Study. Int. J. Environ. Res. Public. Health 18, 9982.
        https://doi.org/10.3390/ijerph18199982
Pahl, R., 2000. On Friendship. Polity Press.
Palinkas, L.A., Horwitz, S.M., Green, C.A., Wisdom, J.P., Duan, N., Hoagwood, K.,
        2015. Purposeful sampling for qualitative data collection and analysis in
        mixed method implementation research. Adm. Policy Ment. Health 42, 533–
        544. https://doi.org/10.1007/s10488-013-0528-y
Panzeri, F., Paola, S.D., Domaneschi, F., 2021. Does the COVID-19 war metaphor
        influence reasoning? PLOS ONE 16, e0250651.
        https://doi.org/10.1371/journal.pone.0250651
Perlman, D., Peplau, L.A., 1981. Toward a Social Psychology of Loneliness, in:
        Personal Relationships 3: Personal Relationships in Disorder. Academic
        Press, London.
Phongsavan, P., Grunseit, A.C., Bauman, A., Broom, D., Byles, J., Clarke, J., Redman,
        S., Nutbeam, D., Project, S., 2013. Age, Gender, Social Contacts, and
        Psychological Distress: Findings From the 45 and Up Study. J. Aging Health
        25, 921–943. https://doi.org/10.1177/0898264313497510

Pierce, M., Hope, H., Ford, T., Hatch, S., Hotopf, M., John, A., Kontopantelis, E.,
        Webb, R., Wessely, S., McManus, S., Abel, K.M., 2020. Mental health before
        and during the COVID-19 pandemic: a longitudinal probability sample survey
        of the UK population. Lancet Psychiatry 7, 883–892.
        https://doi.org/10.1016/S2215-0366(20)30308-4

Pinquart, M., Sorensen, S., 2000. Influences of socioeconomic status, social
        network, and competence on subjective well-being in later life: A meta-
        analysis. Psychol. Aging 15, 187–224. https://doi.org/10.1037//0882-
        7974.15.2.187

Pristavec, T., 2018. Social Participation in Later Years: The Role of Driving Mobility.
        J. Gerontol. B. Psychol. Sci. Soc. Sci. 73, 1457–1469.
        https://doi.org/10.1093/geronb/gbw057

Putnam, R.D., Putnam, P. and I.M.P. of P.P.R.D., 2000. Bowling Alone: The Collapse
        and Revival of American Community. Simon and Schuster.

Rafnsson, S.B., Shankar, A., Steptoe, A., 2015. Longitudinal Influences of Social
        Network Characteristics on Subjective Well-Being of Older Adults: Findings
        From the ELSA Study. J. Aging Health 27, 919–934.
        https://doi.org/10.1177/0898264315572111

Ray, Oldenburg, 1999. Great Good Place: Cafes, Coffee Shops, Bookstores, Bars,
        Hair Salons, and Other Hangouts at the Heart of a Community. Marlowe &
        Co.

Robbins, H. and, 1983. Age Psychological Stress, and Health.

Roberto, K.A., Kimboko, P.J., 1989. Friendships in Later Life: Definitions and
        Maintenance Patterns. Int. J. Aging Hum. Dev. 28, 9–19.
        https://doi.org/10.2190/TQ6K-MATH-8UJT-B265

Rollings, Jasmine, Micheletta, Jérôme, Van Laar, Darren, Waller, Bridget M, 2023.
        Personality Traits Predict Social Network Size in Older Adults. Pers. Soc.
        Psychol. Bull. 49, 925–938. https://doi.org/10.1177/01461672221078664

Rutherford, T., 2011. Air Transport Statistics. House of Commons Library.

Ryff, C.D., Keyes, C.L.M., 1995. The Structure of Psychological Well-Being Revisited.
        J. Pers. Soc. Psychol. 69, 719–727. https://doi.org/10.1037//0022-
        3514.69.4.719

Sander, J., Schupp, J., Richter, D., 2017. Getting together: Social contact frequency
        across the life span. Dev. Psychol. 53, 1571–1588.
        https://doi.org/10.1037/dev0000349

Schafer, P.K. and R., 1985. Equity, Role Strains, and Depression among middle-aged
        and older men and women, in: Quadagno, W.P. and J. (Ed.), Social Bonds in
        Later Life. SAGE Publications, Beverly Hills.

Schmidt, T., Kerr, J., Schipperijn, J., 2019. Associations between Neighborhood
        Open Space Features and Walking and Social Interaction in Older Adults—A
        Mixed Methods Study. Geriatrics 4, 41.
        https://doi.org/10.3390/geriatrics4030041

Schnettler, S., Wöhler, T., 2016. No children in later life, but more and better
        friends? Substitution mechanisms in the personal and support networks of
        parents and the childless in Germany. Ageing Soc. 36, 1339–1363.
        https://doi.org/10.1017/S0144686X15000197

Schwandt, H., 2014. Unmet Aspirations as an Explanation for the Age U-Shape in
        Wellbeing.
Scott, K., 2012. Measuring Wellbeing: Towards sustainability? Routledge, New York.
Sevilla, A., Smith, S., 2020. Baby steps: the gender division of childcare during the
        COVID-19 pandemic. Oxf. Rev. Econ. Policy 36, S169–S186.
        https://doi.org/10.1093/oxrep/graa027
Shankar, A., Rafnsson, S.B., Steptoe, A., 2015. Longitudinal associations between
        social connections and subjective wellbeing in the English Longitudinal Study
        of Ageing. Psychol. Health 30, 686–698.
        https://doi.org/10.1080/08870446.2014.979823
Shaw, B.A., Krause, N., Liang, J., Bennett, J., 2007. Tracking changes in social
        relations throughout late life. J. Gerontol. Ser. B-Psychol. Sci. Soc. Sci. 62,
        S90–S99.
Simmel, G., 2009. Sociology: Inquiries into the Construction of Social Forms. Brill.
Small, M.L., Adler, L., 2019. The Role of Space in the Formation of Social Ties. Annu.
        Rev. Sociol. 45, 111–132. https://doi.org/10.1146/annurev-soc-073018-
        022707
Smith, E.J., Marcum, C.S., Boessen, A., Almquist, Z.W., Hipp, J.R., Nagle, N.N., Butts,
        C.T., 2014. The Relationship of Age to Personal Network Size, Relational
        Multiplexity, and Proximity to Alters in the Western United States.
Smith, K.J., Victor, C., 2019. Typologies of loneliness, living alone and social
        isolation, and their associations with physical and mental health. Ageing Soc.
        39, 1709–1730. https://doi.org/10.1017/S0144686x18000132
Southwick, S., Bonanno, G., Masten, A., Yehuda, R., Panter-Brick, C., 2014.
        Resilience definitions, theory, and challenges: interdisciplinary perspectives.
        Eur. J. Psychotraumatology. https://doi.org/10.3402/ejpt.v5.25338
Srivastava, A., Blakely, G.L., Andrews, M.C., McKee-Ryan, F.M., 2007. Mechanisms
        Linking Nationality and Subjective Wellbeing in Managers in China and the
        United States. J. Manag. Issues 19, 494–516.
Steptoe, A., Shankar, A., Demakakos, P., Wardle, J., 2013. Social isolation,
        loneliness, and all-cause mortality in older men and women. Proc. Natl.
        Acad. Sci. U. S. A. 110, 5797–5801.
        https://doi.org/10.1073/pnas.1219686110
Stöckel, J., van Exel, J., Brouwer, W.B.F., 2023. Adaptation in life satisfaction and
        self-assessed health to disability - Evidence from the UK. Soc. Sci. Med. 328,
        115996. https://doi.org/10.1016/j.socscimed.2023.115996
Stoller, E.P., Longino, C.F., 2001. "Going Home" or "Leaving Home"? The Impact of
        Person and Place Ties on Anticipated Counterstream Migration. The
        Gerontologist 41, 96–102.
Stone, A., Mackie, C., 2014. Subjective Well-Being: Measuring Happiness, Suffering,
        and Other Dimensions of Experience. N. Y. Rev. Books 61, 20–22.
Sturge, G., 2024. Migration Statistics. House of Commons Library.
Suanet, B., Antonucci, T.C., 2016. Cohort Differences in Received Social Support in
        Later Life: The Role of Network Type. J. Gerontol. B. Psychol. Sci. Soc. Sci.
        gbw075. https://doi.org/10.1093/geronb/gbw075

Suanet, B., Huxhold, O., 2020. Cohort Difference in Age-Related Trajectories in
        Network Size in Old Age: Are Networks Expanding? J. Gerontol. Ser. B 75,
        137–147. https://doi.org/10.1093/geronb/gbx166

Suanet, B., van Tilburg, T.G., Broese van Groenou, M.I., 2013. Nonkin in Older
        Adults' Personal Networks: More Important Among Later Cohorts? J.
        Gerontol. Ser. B 68, 633–643. https://doi.org/10.1093/geronb/gbt043

Sustrans, 2020. What is a 20-minute neighbourhood? [WWW Document]. Sustrans.
        URL https://www.sustrans.org.uk/our-blog/get-active/2020/in-your-
        community/what-is-a-20-minute-neighbourhood (accessed 7.17.23).

Szcześniak, M., Bielecka, G., Madej, D., Pieńkowska, E., Rodzeń, W., 2020. The Role
        of Self-Esteem in the Relationship Between Loneliness and Life Satisfaction
        in Late Adulthood: Evidence from Poland. Psychol. Res. Behav. Manag. 13,
        1201–1212. https://doi.org/10.2147/PRBM.S275902

Tashakkori, A., Teddlie, C., 2003. Handbook of Mixed Methods in Social and
        Behavioural Research. SAGE.

The Guardian, 2020. What tier am i in covid rules coronavirus lock-down
        restrictions england local map.

Thiyagarajan, J.A., Prince, M., Webber, M., 2014. Social support network typologies
        and health outcomes of older people in low and middle income countries - A
        10/66 Dementia Research Group population-based study. Int. Rev.
        Psychiatry 26, 476–485. https://doi.org/10.3109/09540261.2014.925850

Thoits, P.A., 2011. Mechanisms Linking Social Ties and Support to Physical and
        Mental Health. J. Health Soc. Behav. 52, 145–161.
        https://doi.org/10.1177/0022146510395592

Tough, H., Brinkhof, M.W.G., Fekete, C., 2022. Untangling the role of social
        relationships in the association between caregiver burden and caregiver
        health: an observational study exploring three coping models of the stress
        process paradigm. BMC Public Health 22, 1737.
        https://doi.org/10.1186/s12889-022-14127-3

Trotter, S., 2021. Ways of Being Together During the COVID-19 Pandemic: Support
        Bubbles and the Legal Construction of Relationships. Front. Sociol. 6, 155.
        https://doi.org/10.3389/fsoc.2021.730216

Twisk, J.W.R., 2013. Applied Longitudinal Data Analysis for Epidemiology: A
        Practical Guide. Cambridge University Press.

UK Data Service, 2023. Research data handling and security guide for users. Univ.
        Essex.

Umberson, D., Montez, J.K., 2010. Social Relationships and Health: A Flashpoint for
        Health Policy. J. Health Soc. Behav. 51, S54–S66.
        https://doi.org/10.1177/0022146510383501

Ungar, M., 2012. Social Ecologies and Their Contribution to Resilience, in: Ungar, M.
        (Ed.), The Social Ecology of Resilience: A Handbook of Theory and Practice.
        Springer, New York, NY, pp. 13–31. https://doi.org/10.1007/978-1-4614-
        0586-3_2

United Nations, Department of Economic and Social Affairs, Population Division,
        2019. World Population Prospects [WWW Document]. URL
        https://population.un.org/wpp/

University of Warwick, 2021. The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) [WWW Document]. Warwick-Edinb. Ment. Wellbeing Scale WEMWBS. URL https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/ (accessed 3.6.23).

Uotinen, V., Rantanen, T., Suutama, T., Ruoppila, I., 2006. Change in Subjective Age among Older People over an Eight-Year Follow-Up: 'Getting Older and Feeling Younger?' Exp. Aging Res. 32, 381–393. https://doi.org/10.1080/03610730600875759

Van der Pers, Marieke., Kibele, Eva.U.B., Mulder, C.H., 2015. Geographic Proximity of Adult Children and the Well-Being of Older Persons. Ageing Soc. 37, 524–551.

Van Tilburg, T.G., 1998. Losing and Gaining in Old Age: Changes in Personal Network Size and Social Support in a Four-Year Longitudinal Study. J. Gerontol. Soc. Sci. 53.

Victor, C.R., Scambler, S., Bowling, A., Bond, J., 2005. The prevalence of and risk factors for loneliness in later life: a survey of older people in Great Britain. Ageing Soc. 25, 357–375. https://doi.org/10.1017/S0144686x04003332

Vos, W.H., Boekel, L.C. van, Janssen, M.M., Leenders, R.T.A.J., Luijkx, K.G., 2020. Exploring the impact of social network change: Experiences of older adults ageing in place. Health Soc. Care Community 28, 116–126. https://doi.org/10.1111/hsc.12846

Walen, H.R., Lachman, M.E., 2000. Social Support and Strain from Partner, Family, and Friends: Costs and Benefits for Men and Women in Adulthood. J. Soc. Pers. Relatsh. 17, 5–30. https://doi.org/10.1177/0265407500171001

Wang, H., Wellman, B., 2010. Social Connectivity in America: Changes in Adult Friendship Network Size From 2002 to 2007. Am. Behav. Sci. 53, 1148–1169. https://doi.org/10.1177/0002764209356247

Weiss, J., Lawton, L.E., Fischer, C.S., 2022. Life course transitions and changes in network ties among younger and older adults. Adv. Life Course Res. 52, 100478. https://doi.org/10.1016/j.alcr.2022.100478

Weiss, R., 1973. Loneliness: The Experience of Emotional and Social Isolation. MIT Press.

Wenger, C.G., 1991. A Network Typology: From Theory to Practice. J. Ageing Stud. 5, 147–162.

Westerhof, G.J., Barrett, A.E., 2005. Age Identity and Subjective Well-Being: A Comparison of the United States and Germany. J. Gerontol. Ser. B 60, S129–S136. https://doi.org/10.1093/geronb/60.3.S129

WHO, 2021. Timeline: WHO's COVID-19 response [WWW Document]. URL https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline (accessed 11.26.21).

WHO, 2019. Coronavirus disease 2019 (COVID-19) Situation Report – 51 [WWW Document]. URL https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf?sfvrsn=1ba62e57_10 (accessed 12.6.21).

Wiles, J.L., Leibing, A., Guberman, N., Reeve, J., Allen, R.E.S., 2012. The Meaning of "Aging in Place" to Older People. Gerontologist 52, 357–366.

Wrzus, C., Hanel, M., Wagner, J., Neyer, F.J., 2013. Social Network Changes and Life
　　　　Events Across the Life Span: A Meta-Analysis. Psychol. Bull. 139, 53–80.
　　　　https://doi.org/10.1037/a0028601

Yanez, N.D., Weiss, N.S., Romand, J.-A., Treggiari, M.M., 2020. COVID-19 mortality
　　　　risk for older men and women. BMC Public Health 20, 1742.
　　　　https://doi.org/10.1186/s12889-020-09826-8

Yang, Y.C., Boen, C., Gerken, K., Li, T., Schorpp, K., Harris, K.M., 2016. Social
　　　　relationships and physiological determinants of longevity across the human
　　　　life span. Proc. Natl. Acad. Sci. 113, 578–583.
　　　　https://doi.org/10.1073/pnas.1511085112

Yarker, S., Doran, P., Buffel, T., 2024. Theorizing "Place" in Aging in Place: The Need
　　　　for Territorial and Relational Perspectives. The Gerontologist 64, gnad002.
　　　　https://doi.org/10.1093/geront/gnad002

Zhang, Y., Engelman, M., Agree, E.M., 2012. Moving Considerations: A Longitudinal
　　　　Analysis of Parent–Child Residential Proximity for Older Americans. Res.
　　　　Aging 35, 663–687.

10. <u>**Appendices**</u>

Appendix A: Sampling in UKHLS, Understanding Society

The participants in the UK household longitudinal survey (U-Soc) are classified in three ways, each with different survey membership criteria. These are OSMs, TSMs and PSMs. Original Sample Members (OSM) are all survey participants recruited at Wave One, and any children born to an OSM mother (Knies, 2016). OSMs are eligible to take part in the research indefinitely if they remain resident in the UK (*ibid*). Temporary Sample Members (TSMs) (*ibid*). TSMs are survey members who join an OSM's household after wave 2. TSMs are only eligible for an interview whilst they reside with an OSM (*ibid*). The last group, Permanent Sample Members (PSMs) are male TSMs who have fathered children with OSM mothers (*ibid*). PSMs have the same inclusion criteria as OSMs (*ibid*).

Addresses in England and Wales are sampled from the Small Users Postal Address File. This comprises residences that receive under fifty letters per day to capture residential rather than institutional/organizational premises. Individuals living in large care-settings are omitted under this sampling approach. Individuals who are resident in non-institutional housing upon entering the survey and subsequently move are still included in the sample. It is not possible to estimate the number of people for which this may apply.

Appendix B: Variable Manipulation in Study One

This section outlines the variables utilised in study one and how they are manipulated from the questions asked in Understanding Society. Table 10.3 provides an outline of the variable manipulations, and Table 10.4 provides frequencies for all variables. Two variables, household composition and community network size, are discussed in more depth below. Do files demonstrating the manipulation of all variables can be found in Appendix B. Appendix O outlines the variable manipulations for Study Two with appendix N providing the corresponding do files.

Household Composition

The variable household composition is derived from two variables, household size (the number of individuals resident in a property) (hhsize) and a variable that denotes if an individual lives with their spouse or not (Lvsp_dv). Household composition has four categories: alone, partner only, others only and partner and others. The descriptive statistics outlined below can shed light on the types of individuals that may be subsumed within this 'other' category.

1848 (84%) of participants report living with one or more of their own children (see table 10.1). This is the second most frequently listed co-habitant relationship after a spousal partnership (N=7,367). Other reported household relationships include, living with a grandchild (N=411), living with a sibling (N=75), with a parent (N=80), and 217 reported living with one of the following, cousin, aunt, uncle, niece, nephew, other relative, employee, employer, lodger, boarder, tenant, or landlord/lady or other non-relative.

When these household relationship types are transposed onto the household composition categories, one can see that 86% of those who live with a partner and another individual also live with a child (see table 10.2). Moreover, 74% of those who live with individuals who were not their partner (just others) reported living with a child. When looking at household size, it is also evident that in most

household there is a single 'other' residing in the property, rather than multiple individuals with different relationship statuses. For example, 85% of households, categorised as containing a partner and others, hold 3 or 4 individuals. This is the survey participant (ego), the partner, and two others. Similarly, 82% of households categorised as containing just others, hold 2 or 3 individuals. This must be the survey participant and one or two 'others'. Taken together it is reasonable to presume that a large proportion of individuals classified as 'others' are in fact the children of the survey participants.

Table 10.1: Frequencies reporting the presence of children, parents, siblings, grandchildren, and other individuals by household composition group

N (column percentages)	Household Composition Groups		
	Partner and Others	Just Others	Total
Presence of children in household			
Yes	1,258 (89%)	590 (74%)	1,848 (84%)
No	148 (11%)	206 (26%)	357 (16%)
Presence of grandchildren in household			
Yes	234 (17%)	177 (22%)	411 (19%)
No	1,172 (83%)	619 (78%)	1,794 (81%)
Presence of sibling in household			
Yes	14 (1%)	61 (8%)	75 (3%)
No	1,392 (99%)	735 (92%)	2,130 (97%)
Presence of Parent in Household			
Yes	43 (3%)	37 (5%)	80 (4%)
No	1,363 (97%)	759 (95%)	2,125 (96%)
Presence of 'Other' – includes a cousin, aunt, uncle, niece, nephew, other relative, employee, employer, lodger, boarder, tenant, or landlord/lady or other non-relative			
Yes	81 (6%)	133 (17%)	217 (10%)
No	1,325 (94%)	633 (83%)	1,988 (90%)

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Table 10.2: Number of household members by household composition type

N (column percentage) Total number of household members	Household Composition Groups				
	Alone	Partner Only	Partner and Others	Just Others	Total
1	3,175 (100%)	-	-	-	3,175 (28%)
2	-	5,959 (100%)	-	506 (61%)	6,465 (57%)
3	-	-	891 (63%)	174 (21%)	1,065 (9%)
4	-	-	315 (22%)	61 (7%)	376 (3%)
5	-	-	89 (6%)	46 (6%)	135 (1%)
6	-	-	58 (4%)	23(3%)	81 (1%)
7	-	-	33 (2%)	12 (1%)	45 (-)
8	-	-	17 (1%)	3 (-)	20 (-)
9	-	-	2 (-)	3 (-)	5 (-)
10	-	-	2 (-)	2 (-)	4 (-)
11	-	-	1 (-)	0 (-)	1 (-)
12	-	-	0 (-)	1 (-)	1 (-)
Total	3,175 (100%)	5,959 (100%)	1,408 (100%)	831 (100%)	11,373 (100%)

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2016 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Community Organisation Activity

Community organisation activity is a variable derived from variables that ask participants if they are active in one or more of a list of known community organisations. Two individuals report being active in nine different social groups – the highest amount observed. However, 48% of the respondents report regularly joining into none of these sixteen organisations and a further 28% report being active in only one. The variable is recoded into a categorical variable, with three groups – those active in no organisations, those active in one organisation and those active in 2 or more organisations.

This measure has, however, several limitations. Firstly, it is largely a measure of community network diversity rather than intensity as we do not capture how regularly they interact with that group or the degree to which they are integral to this group. One individual who is the chair or principal organiser of one group may arguably have a stronger community social network than an individual who loosely participates in five different organisations. Secondly, some of the groups are not necessarily localised – thus may not be attributed to geographic communities, and potentially also not connected to face-to-face interactions. Thirdly, some of the groups have exclusionary membership, either intentionally or unintentionally. Intentionally exclusionary groups include the women's group for which you will likely need to identify as a woman and a parents' association for which you need to be a parent. However other groups may be unintentionally exclusionary such as certain sports groups that may have high membership fees and thus potentially excluding certain socio-economic groups. It is important, therefore, to recognise that certain demographics may have a higher chance of conforming to the inclusion criteria of the organisations listed. To counter this all types of groups were included in the simple categorical measure.

Table 10.3: Manipulation of all variables in Study One

Variable	U-Soc Variable Code	Question-wording	Variable Manipulation
Subjective Wellbeing	sclfsato	Here are some questions about how you feel about your life. Please choose the number which you feel best describes how dissatisfied or satisfied you are with the following aspects of your current situation: Your life overall.	Re categorised into a binary outcome with 'neither satisfied nor dissatisfied' being categorised as low satisfaction.
Size of friendship network	closenum	How many close friends would you say you have?	Variable was made into a four-category variable due to a long-tailed distribution. Individuals that had previously been filtered out of the question as they reported no friends on a filter question were reincluded to create the bottom category – 'no close friends. Clustering can also be observed around multiples of ten, presumably because individuals tend to recall figures in multiples of ten rather than exact numbers.
Age Homophily	simage	Now some questions about your friends: What proportion of your friends are of a similar age to you?	Category 5 that denotes the individuals who have no friends is re-coded as missing values ensure that the social network attribute categories are comparable. All individual coded as having no friends in friendship network size are also coded as missing values.
Ethnic Group Homophily	simrace	And what about an ethnic group. What proportion of your friends are of the same ethnic group as you?	Same as above
Education Homophily	simeduc	What proportion of your friends have a similar level of education as you?	Same as above
Income Homophily	siminc	What proportion of your friends have a similar level of income to you?	Same as above
Geographic Proximity	simarea	What proportion of your friends live in your local area?	Categories 4 and 5 were merged to ensure that friendship attributes are comparable across variables
Frequency of Online Interaction	netcht	How many hours do you spend chatting or interacting with friends through social websites on a normal weekday, that is Monday to Friday?	The top two categories (4 -6 hours and 7 or more hours) have been combined into one category '4 or more hours'. This was done due to low cell counts in these categories.
Multiplexity	simfam	Some people consider family members as friends. What proportion of your friends are family members?	Category 5 that denotes the individuals who have no friends is re-coded as missing values ensure that the social network attribute categories are comparable. All individual coded as having no friends in friendship network size are also coded as missing values.
Household Composition	Lvsp_dv hhsize	Hhsize = Calculated in the survey script by summing the number of individuals per household from the household grid. This may include absent household members. Livesp_dv = Flag for whether or not a person is married to somebody else living in the household.	Constructed from two variables household size and presence of a spouse in the household

Size of Family Network	lvrel1,2 nrels3,4,5,6,7	We now have a few questions about contact you have with family members not living here with you. Excluding relatives who are living in this household with you at the moment, can you tell me which of these types of relatives you have alive at the moment? Mother, Father, Son/daughter, brother/sister, grandchildren, grandparents, step/adoptive mother, step/adoptive father, none of these	Variables denoting the presence of living non-residential children, siblings, grandchildren, great-grandchildren, and parents were added with variables denoting the number of children, siblings, grandchildren, and great-grandchildren to generate a composite kin-size variable.
Community Network Size	orga1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16	Whether you are a member or not, do you join in the activities of any of these organisations on a regular basis?	Variables denoting active participation in one of 16 listed organisations were combined to create a composite community network size variable.
Age	Age_dv	Derived variable, Age at interview in years	Age is transformed from a continuous to a categorical variable due to low cell counts in the higher age categories.
Sex	sex_dv	Respondent's sex, derived and cross-wave checked. Assumes a value of 1 if all information in the study suggests the respondent is male, 2 if all information in the study suggests the respondent is female and 0 if the information is inconsistent and the forename listed in the survey administration data base also does not suggest a particular gender.	Removal of individuals in 'inconsistent category', as there are only 2 observations in this group.
Marital Status	marstat	Since personal circumstances can change over time, we would just like to check some important information. What is your legal marital status?	Removal of distinction between heterosexual and homosexual unions. E.g Civil partnership considered as married. This is due to low cell counts within civil partnerships, and a lack of theoretical interest in sexuality.
Education	qf_high_dv	Derived variable reporting highest level of reported education	The categories are simplified due to low cell counts in some groups.
Employment	jbstat	Which of these best describes your current employment situation?	The categories are simplified due to low cell counts in some groups.
Nationality (Born in the UK)	ukborn	Were you born in the UK, that is in England, Scotland, Wales or Northern Ireland?	The categories are simplified due to low cell counts in some groups, and little interest in nationalities within the UK
Tenure	tenure_dv	Housing tenure. Derived variable differentiating between the following tenures: Owned outright, Owned with mortgage, Local Authority rented, Housing Association rented, Rented from employer, Rented private (unfurnished), Rented private (furnished),	The categories are simplified due to low cell counts in some groups.
Self-reported health	sclsfsat1	Self-reported Health Status	The categories are simplified due to low cell counts in some groups.
Presence of an Illness or Disability	health	Do you have any long-standing physical or mental impairment, illness or disability? By 'long-standing' I mean anything that has troubled you over a period of at least 12 months or that is likely to trouble you over a period of at least 12 months.	No change

Source: Author's analysis of data from Author's creation

Table 10.4: Frequencies of all variables used in the analysis in Study One

Variable	Frequencies (wave 9)					
	Category One	Category Two	Category Three	Category Four	Category Five	Category Six
Subjective Wellbeing	Low Satisfaction (2,124)	High Satisfaction (8,377)				
Size of Friendship Network	No close friends (689)	1 close friend (594)	2-5 close friends (5,449)	6-10 close friends (3,076)	>= 11 close friends (1,078)	
Age Homophily	All Similar (4,212)	More than Half (3,645)	About Half (1,569)	Or Less than Half (960)		
Ethnicity Homophily	All the Same (6,877)	More than Half (2,535)	About Half (428)	Or Less than Half (537)		
Education Homophily	All the Same (4,633)	More than Half (3,186)	About Half (1,512)	Or Less than Half (673)		
Income Homophily	All the Same (1,759)	More than Half (2,257)	About Half (2,324)	Or Less than Half (1,749)		
Geographic Proximity	All the Same (2,037)	More than Half (1,953)	About Half (3,737)	Or Less than Half (2,037)		
Frequency of Online Interaction	None (514)	Less than an Hour (1,942)	1-3 Hours (659)	4 or more hours (119)		
Community Organisation Activity						
Multiplexity (Proportion of friends are also family)	All friends are family (833)	More than Half (1,379)	About Half (1,986)	Less than Half (4,589)		
Household Composition	Alone (3,175)	Partner Only (5,959)	Others Only (831)	Partner and Others (1,882)		
Size of Family Network	No Family (548)	One family member (710)	2/5 family members (3781)	6/10 family members (4,098)	11/60 family members (2,510)	
Age	60-65 (3,312)	66-70 (2,711)	71-75 (2,249)	76-80 (1,526)	81-85 (933)	>=86 (642)
Sex	Male (5,269)	Female (6,104)				
Education	None of the above (3,554)	Secondary Education (3,616)	Tertiary Education (1,760)			
Employment	In employment (2,162)	Other (192)	Retired (8,635)	Unemployed (120)	Sick or disabled (258)	
Nationality (Born in the UK)	No (1,394)	Yes (9,862)				
Tenure	Owned Outright (8,064)	Owned with mortgage (1,219)	Rent from local authority or housing association (1,518)	Rent from employer, private rent or other (542)		
Self-reported health status	Fair/Poor (3,195)	Good (3,579)	Excellent/Very Good (3,747)			
Prescence of an Illness or Disability	Yes (6,201)	No (5,156)				

Source: Author's analysis of data from Author's creation

Appendix C: Exploratory Analysis for Study One

This section provides some contextual descriptive statistics on the relationships between the variables used throughout the analysis in the first thesis study (results presented in chapter four). The relationship between life satisfaction and age, gender, nationality, socio-economic status and health are presented first. These variables are used as demographic controls in the models presented in section 4.2 and 4.3. The next section explores the descriptive relationship between the household compositions groups used as sub-samples in the analysis in Study One and these same demographic controls. The final section includes some descriptive statistics on the small group of individuals who are particularly socially isolated. These are individuals who report having neither family nor friends and not participating in any social organisations. Although these individuals are not the primary focus of the study it is useful to understand how these individuals differ from the wider sample.

10.1.1. Life satisfaction by Age, Gender, Nationality, Socio-economic Status and Health

10.1.1.1.   Age

There is a wealth of existing literature that explores the association between age and subjective wellbeing (Blanchflower and Oswald, 2008; Gwozdz and Sousa-Poza, 2009; Lopez Ulloa, B. F. et al., 2013). Several studies highlight an increase in subjective wellbeing in early late-life (50s and 60s) after a reduction in early life (teens and 20s). This is often termed the 'wellbeing U-curve' (*ibid*). This is then followed by a slowing and then a reduction in wellbeing as people reach later late-life (80+). These studies often cite retirement and a reduction in childcare burdens in early late-life as rationale for an increase in wellbeing. Moreover, the likelihood of an increase in both caregiving and receiving behaviour in late late-life is cited as a

key explanatory mechanism for the reduction in life satisfaction seen at this final stage of the life course.

The cross-tabulations between age and life satisfaction (presented in table 10.5) provides evidence to support the wellbeing u-curve theories. The proportion of individuals reporting high life satisfaction increases by 8 percentage points between the ages of 60-65 (74%) and 66-70 (82%). There also some evidence to support the idea that life expectancy gains in early late-life start to slow in one's 70s and even reduce in one's 80s. After this initial jump in the proportion of individuals who report high life satisfaction, only a 2% gain is seen in individuals from the ages of 70 to 80. For those over the age of 80 a reduction in the proportions reporting high life satisfaction is evident. Only 16% of 76–80-year-olds, yet 20% of those over the age of 86, reported having low life satisfaction.

Table 10.5: Cross-tabulations of Life satisfaction and Age

Satisfaction with Life						
	Low Life Satisfaction		High Life Satisfaction		Total	
	No.	Row %	No.	Row %	No.	Row %
Age						
60-65	820	26%	2,295	74%	3,115	100%
66-70	478	19%	2,099	82%	2,577	100%
71-75	355	17%	1,759	83%	2,114	100%
76-80	225	16%	1,149	84%	1,374	100%
81-85	146	18%	669	82%	815	100%
>=86	100	20%	406	80%	506	100%
Total	2,124	20%	8,377	80%	10,501	100%
Pearson chi2(5) = 107.1211 P=<0.001						

Sample includes individuals over the age of 60 who responded at wave 9, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614.

10.1.1.2. Gender

The bivariate relationship between gender and life satisfaction presented in table 10.6 is not significant (p>0.1), and there is very little observable difference between the number of men and women reporting highlife satisfaction. Gender is, however, analysed and used as a control throughout Study One due to the wealth of literature that suggests that gender is of critical conceptual importance (Blanchflower and Bryson, 2023, 2022).

Table 10.6: Cross-tabulations of Life satisfaction and Gender

Sex						
	Low Life Satisfaction		High Life Satisfaction		Total	
	No.	Row %	No.	Row %	No.	Row %
Male	977	20%	3,868	80%	4,845	100%
Female	1,147	20%	4,509	80%	5,656	100%
Total	2,124	20%	8,377	80%	10,501	100%
Pearson chi2(1) = 0.0211 P=0.884 (not significant to the 0.05%)						

Sample includes individuals over the age of 60 who responded at wave 9, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614.

10.1.1.3.   Nationality

Nationality is also included as a control in the models in Study One. The results suggest that greater proportions of individuals who are British born report high life satisfaction than those who are not born in Britain. Seventy-six percent of non-British-born respondents report high life satisfaction compared to 80% of those who are British-born (see table 10.7).

Table 10.7: Cross-tabulations of Life satisfaction and Nationality

Nationality						
	Low Life Satisfaction		High Life Satisfaction		Total	
British born?	No.	Row %	No.	Row %	No.	Row %
No	271	25%	836	76%	1,107	100%
Yes	1,823	20%	7,466	80%	9,289	100%
Total	2,094	20%	8,302	80%	10,396	100%
Pearson chi2(1) = 14.4957 P=<0.001						

Sample includes individuals over the age of 60 who responded at wave 9, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614.

10.1.1.4.   Socio-economic Status

Existing literature suggests that although absolute socio-economic status may not have an influence on life satisfaction, relative income does (McBride, 2001) (see section 2.2). The data found in Study One does, however, suggest an association

between education level, tenure, and employment status (used as proxies for socio-economic status) and life satisfaction (see table 10.8).

Those who own their own homes outright report having high subjective wellbeing in the greatest proportions (83%). Those who own their own home with a mortgage closely follow (74%), and those with the least housing capital as renters report high life satisfaction in the smallest proportions (69/72%). In line with these trends higher proportions of individuals report high life satisfaction among the individuals educated to a tertiary level than among those educated at a secondary level or lower. Similarly, those who are unemployed report high life satisfaction in lower proportions (65%) than those in employment (78%). Interestingly, 82% of retired individuals report high life satisfaction, this is the highest of the employment categories. This potentially supports the hypothesis that retirement is a key explanatory factor behind the increase in the proportion of individuals reporting high life satisfaction between the ages of 60-65 and 66-70, described earlier. However, it is worth noting that this may not be indicative of retirement itself, but indicative of the financial freedom that individuals who are able to retire may hold.

Table 10.8: Cross-tabulations of Life satisfaction by Tenure, Education and Employment

Tenure	Low Life Satisfaction		High Life Satisfaction		Total	
	No.	Row %	No.	Row %	No.	Row %
Owned outright	1,271	17%	6,254	83%	7,525	100%
Owned with mortgage	289	26%	836	74%	1,125	100%
Rent from local authority or housing association	415	31%	907	69%	1,322	100%
Rented from employer, Private rent or Other	140	28%	362	72%	502	100%
Total	2,115	20%	8,359	80%	10,474	100%
Pearson chi2(3) = 193.3462 P=<0.001						
Education						
None of the above	711	23%	2,456	78%	3,167	100%
Secondary education	683	20%	2,725	80%	3,408	100%
Tertiary education	263	16%	1,422	84%	1,685	100%
Total	1,657	20%	6,603	80%	8,260	100%
Pearson chi2(2) = 32.1072 P=<0.001						
Employment						
In employment	459	23%	1,585	78%	2,044	100%
Other	55	34%	106	66%	161	100%
Retired	1,426	18%	6,537	82%	7,963	100%
Unemployed	38	36%	69	65%	107	100%
Sick or disabled	145	64%	80	36%	225	100%
Total	2,123	20%	8,377	80%	10,500	100%
Pearson chi2(4) = 340.4429 P=<0.001						

Sample includes individuals over the age of 60 who responded at wave 9, rounded to the nearest whole percent. Results not weighted.

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614.

10.1.1.5.   Health

Out of the employment categories the group with the smallest proportion who
report high subjective wellbeing are those who report being sick or disabled (36%).
This highlights, the crucial role that health plays in one's wellbeing (Stöckel et al.,
2023). However, it is important to note that adaption effects have been found
where people adjust to negative health conditions and find their life satisfaction
stabilises after a health shock (*ibid*). Two health variables are explored and used
throughout this thesis: the presence of an illness or disability and subjective health
status.

For both variables and both aspects of one's health, higher proportions of
individuals reported being satisfied with their life if their health was good than
those who had poor health (see table 10.9). For example, there was a 29% increase
in the number of individuals who report high life satisfaction between those who
had fair to poor health (62%) and those with excellent to very good health (91%).
This is one of the biggest differences seen in these bivariate results. Interestingly, a
larger proportion of individuals who reported having a long-standing illness or
disability reported high life satisfaction than of the individuals who reported fair or
poor health. This either suggests that the presence of a health condition does not
necessitate poor quality of life or that many who live with a long-term health
condition have adapt to this. This is explored more extensively in the qualitative
analysis in Chapter 6 and in section 3.5.

A smaller proportion of those who were not in work due to sickness or disability
reported high life satisfaction than the proportion of individuals who reported
either having a long-term illness/disability or the proportion who reported a
fair/poor subjective health status. This could be explained by one of the following
hypotheses: 1) when one's health impacts their ability to work it has a greater
impact on their wellbeing than the presence of a poor health status does alone or,
2) that experiencing poor health early in later life (pre-retirement) is more

detrimental to one's SWB than experiencing poor health later when one may be characterised as retired rather than out of work due to health reasons.

Table 10.9: Cross-tabulations of Life satisfaction by Health

Subjective Health Status						
	Dissatisfied		Satisfied		Total	
	No.	Row %	No.	Row %	No.	Row %
Excellent/Very Good	355	105	3,387	91%	3,742	100%
Good	568	16%	3,004	84%	3,572	100%
Fair/Poor	1,199	38%	1,985	62%	3,184	100%
Total	2,122	20%	8,376	80%	10,498	100%
Pearson chi2(3) = 908.8713 P=<0.001						
Long-standing Illness or Disability						
Yes	1,474	26%	4,156	74%	5,630	100%
No	647	13%	4,213	87%	4,860	100%
Total	2,121	20	8,369	80%	10,490	100%
Pearson chi2(2) = 267.7664 P=<0.001						

Sample includes individuals over the age of 60 who responded at wave 9, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614.

This sub-section has illuminated the relationship between some of the key model controls and the independent variable (life satisfaction) utilised in Study One. Bivariate analysis of the dependent variables – friendship size and nature are outlined in the main analysis in sections 4.2 and 4.3. The next sub-section will continue to outline how the relationship between these model controls (age, gender, tenure, nationality, education, employment, health, and subjective health) and life satisfaction vary by the household composition of the individual.

10.1.2. Household Composition by Life Satisfaction, Age, Gender, Nationality, Socio-economic Status, & Health

This thesis is primarily interested in the exploration of older adult's friendship networks on their life satisfaction. However, friendship networks cannot be explored without recognition of the other types of social relationship and connections that an individual may have and the impact these may have on their wellbeing. Older adult's non-residential familial and community networks are captured through the variables, community network size and family network size. Yet, it is also important to recognise the impact of an individual's residential social

networks. This has been captured through an individual's household composition. See section 1.3.6 for a further discussion of the use of household composition within this thesis.

10.1.2.1.   Life satisfaction

Throughout the analysis in Study One, differences in the relationship between friendship and life satisfaction have been drawn between individuals in a variety of household compositions. These include older people who live alone, older people who live with just a partner, older people who live with one or more individuals who are not their partner, and finally older people who live with a partner and one or more individuals who are not their partner. This section will explore the relationship between household composition and a range of demographic factors including age, gender, tenure, education, employment, and health, to provide further context to the main analysis provided in Section 4.2.

Table 10.10: Frequencies for Household Composition*

Household Composition		
	No.	Col %
Alone	3,175	28%
Partner Only	5,959	52%
Others Only	831	7%
Partner and Others	1,408	12%
Total	11,373	100%

*Computed from household size and so may include a number of individuals including but not limited to siblings, children, grandchildren, great-grandchildren, lodgers, and friends.
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Many respondents live with just their partner (52%). The least populous category is those who live with just 'others' (7%), these are households where an older person does not live with a partner or on their own but with one or more other individuals. Just over a quarter of individuals in the sample live alone (28%). The cross-tabulations for household composition with subjective wellbeing show that not only are those who live with their partner the most populous group, but they also contain the highest proportion of individuals with high life satisfaction (84%) (see

section 4.2). Those who live with only other individuals on the contrary report low
life satisfaction in the greatest proportions (32%).

Table 10.11: Cross-tabulations for Household Composition* and Life
satisfaction

Subjective Wellbeing: Life satisfaction						
	Low Life Satisfaction		High Life Satisfaction		Total	
Household Composition	No.	Row %	No.	Row %	No.	Row %
Alone	672	23%	2,302	77%	2,974	100%
Partner Only	922	17%	4,676	84%	5,598	100%
Others Only	217	32%	461	68%	678	100%
Partner and Others	313	25%	938	75%	1,251	100%
Total	2,124	20%	8,377	80%	10,501	100%
Pearson chi2(3) = 135.4180 P=<0.001						

*Computed from household size and so 'others' may include a number of individuals including but not limited to siblings,
children, grandchildren, great-grandchildren, lodgers, and friends. Appendix B has a breakdown of the frequencies within this
category.
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent.
Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and
Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

10.1.2.2.   Age

Age and household composition are associated in several interesting ways (see
table 10.12). Smaller proportions of participants in older age categories report
living with a partner and others. The number of people in this group halves from
23% of 60–65-year-olds to 12% of 66-70 year olds. It then gradually reduces to just
2% of individuals over the age of 86. Individuals who live with just others make up
the smallest proportion of all the age groups, however there is some observable
variation. They occupy bigger proportions of the 60–65-year-olds (9%) and the over
86 year olds (14%), than among any of the other age groups. Only 5% of individuals
between the ages of 71 and 75 report living with just other individuals. In contrast
individuals who live with just a partner, make up the largest proportion of each age
group, until the over 86-year-olds in which solo living overtakes as the largest
proportion of this group. Individuals living alone gradually make up an increasingly
large proportion of each age group, increasing from just 19% of 60–65-year-olds to
61% of individuals over the age of 86.

Table 10.12: Cross-tabulations for Household Composition* and Age

	Household Composition									
	Alone		Just with Partner		Just with Others		Partner and Others		Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %
Age										
60-65	635	19%	1,627	49%	283	9%	767	23%	3,312	100%
66-70	629	23%	1,609	59%	151	6%	322	12%	2,711	100%
71-75	616	27%	1,356	60%	117	5%	160	7%	2,249	100%
76-80	511	34%	807	53%	105	7%	103	7%	1,526	100%
81-85	395	42%	407	44%	88	9%	43	5%	933	100%
>=86	389	61%	153	24%	87	14%	13	2%	642	100%
Total	3,175	28%	5,959	52%	831	7%	1,408	12%	11,373	100%
Pearson chi2(15) = 1190.8840 P=<0.001										

*Computed from household size and so 'others' may include a number of individuals including but not limited to siblings, children, grandchildren, great-grandchildren, lodgers, and friends. Appendix B has a breakdown of the frequencies within this category.
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

As highlighted in section 1.3.6 there is a strong argument to suggest that for future research household composition could be used as a proxy for life-stage, and further research should be conducted to interrogate the validity of this. Age is arguably an increasingly poor indicator of life-stage due to the heterogeneity in the chronological age in which individuals reach key life-stages. This, therefore, highlights the potential need for new variables that may be able to capture one's 'life-stage' more accurately.

10.1.2.3.   Gender

Of the men in the sample, greater proportions live with just a partner (Men = 59%) or a partner and others (Men =16%), than women. However, of women, larger proportions report living either alone (34%) or with just others (10%), than men. This trend is potentially evident because solo-occupancy households and households with just others are the most frequent amongst those in the latter part of late-life, and women tend to out-live men, making late-life also more greatly populated by women.

Table 10.13: Cross-tabulations for Household Composition* by Gender

	Household Composition									
	Alone		Just with Partner		Just with Others		Partner and Others		Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %
Sex										
Male	1,098	22%	3,091	59%	239	5%	841	16%	5,269	100%
Female	2,077	34%	2,868	47%	592	10%	567	9%	6,104	100%
Total	3,175	28%	5,959	52%	831	7%	1,408	12%	11,373	100%
Pearson chi2(3) = 454.6334 P=<0.001										

*Computed from household size and so 'others' may include a number of individuals including but not limited to siblings, children, grandchildren, great-grandchildren, lodgers, and friends. Appendix B has a breakdown of the frequencies within this category.
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

10.1.2.4.   Nationality

When exploring the relationship between nationality and household composition, some interesting relationships emerge. Greater proportions of individuals born in the UK report living in solo household formations or in partnered households than for those not born in the UK. Whereas larger proportions of individuals not born in the UK report living with just others or a partner and others. This supports existing literature that suggests that ethnic minorities groups are more likely to live in large complex household formations (Office for National Statistics (ONS), 2019d).

Table 10.14: Cross-tabulations for Household Composition* by Nationality

	Household Composition									
	Alone		Just with Partner		Just with Others		Partner and Others		Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %
Nationality										
No	342	25%	474	34%	208	15%	370	27%	1,394	100%
Yes	2,797	28%	5,435	55%	607	6%	1,023	10%	9,862	100%
Total	3,139	28%	5,909	53%	815	7%	1,393	12%	11,256	100%
Pearson chi2(3) = 497.7167 P=<0.001										

*Computed from household size and so 'others' may include a number of individuals including but not limited to siblings, children, grandchildren, great-grandchildren, lodgers, and friends. Appendix B has a breakdown of the frequencies within this category.
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

10.1.2.5.   Socio-economic status

Socio-economic status is explored using three separate variables, tenure, education, and employment. Almost half of those who live in rented accommodation live in single-occupancy households (43%/51%), compared to just 25% of those who own their property outright and 16% who own their property with a mortgage (see table 10.15). Whereas 59% of those who own their property outright live with just a partner. This is potentially evidence of individuals selling off housing assets as they age to free up capital for retirement, downsizing and/or residential transitions into more complex household structures due to adapting care needs. However, this may also be indicative of the socioeconomic status of individuals in different household compositions and tenures.

Thirty-one percent of those who have no formal education live in single-occupancy households. This is a greater proportion than among those who have secondary (27%) or tertiary (21%) education. In contrast, greater proportions of individuals with tertiary education (58%) live with just a partner, than those with no education (49%). This may be indicative of a cohort effect and the expansion of the post-war education system, however, may also similarly to above suggest differentials in the socio-economic status of individuals in each household composition.

Of those who reported sickness or disability as their employment status 40% live in single-occupancy households, greater than the proportion among any other household composition group. Likewise, 10% of individuals who report being unemployed and 16% of those who report sickness or disability also report living with just others. This suggests that living in a solo-occupancy household, and a household with just others may be a household composition that is more populous among individuals in low-income employment categories.

Table 10.15: Cross-tabulations for Household Composition* by Tenure, Education and Employment

| | Household Composition | | | | | | | | | |
| | Solo-occupancy | | Just with Partner | | Just with Others | | Partner and Others | | Total | |
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %
Tenure										
Owned outright	1,972	25%	4,775	59%	450	6%	867	11%	8,064	100%
Owned with mortgage	193	16%	539	44%	146	12%	341	28%	1,219	100%
Rent from local authority or housing association	770	51%	418	28%	188	12%	142	9%	1,518	100%
Rented from employer, Private rent or Other	231	43%	211	39%	44	8%	56	10%	542	100%
Total	3,166	28%	5,943	52%	828	7%	1,406	12%	11,343	100%
Pearson chi2(9) = 1101.1216 P=<0.001										
Education										
None of the below	1,096	31%	1,741	49%	334	9%	383	11%	3,554	100%
Secondary education	985	27%	1,919	53%	222	6%	490	14%	3,616	100%
Tertiary education	362	21%	1,025	58%	105	6%	268	15%	1,760	100%
Total	2,443	27%	4,685	53%	661	7%	1,141	13%	8,930	100%
Pearson chi2(6) = 117.9571 P=<0.001										
Employment										
In employment	411	19%	1,067	49%	159	7%	525	24%	2,162	100%
Other	18	9%	75	39%	30	16%	69	36%	192	100%
Retired	2,604	30%	4,703	55%	587	7%	741	9%	8,635	100%
Unemployed	36	30%	43	36%	12	10%	29	24%	120	100%
Sick or disabled	104	40%	69	27%	42	16%	43	17%	258	100%
Total	3,173	28%	5,957	52%	830	7%	1,407	12%	11,367	100%
Pearson chi2(12) = 673.4602 P=<0.001										

*Computed from household size and so 'others' may include a number of individuals including but not limited to siblings, children, grandchildren, great-grandchildren, lodgers, and friends. Appendix B has a breakdown of the frequencies within this category.
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

10.1.2.6.   Health

Greater proportions of individuals with poor health statuses live alone (subjective health status=34%, illness or disability=32%), when compared to those in good health (subjective health status= 25%, illness or disability=23%), see table 10.16. The opposite trend is evident for those living with just a partner, whereby greater proportions of individuals in good health report living with a partner than for those in poor health. Interestingly, there is only one or two percentage point difference in the proportion of individuals living either with just others or with a partner and others between those in good and poor health.

Table 10.16: Cross-tabulations for Household Composition* and Health Status

	Household Composition									
	Alone		Just with Partner		Just with Others		Partner and Others		Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %
Subjective Health Status										
Excellent/Very good	925	25%	2,229	60%	188	5%	405	11%	3,747	100%
Good	965	27%	1,932	54%	194	5%	488	14%	3,579	100%
Fair/Poor	1,087	34%	1,446	45%	298	9%	364	11%	3,195	100%
Total	2,977	28%	5,607	53%	680	7%	1,257	12%	10,521	100%
Pearson chi2(6) = 194.6283 P=<0.001										
Long-standing illness or disability										
Yes	1,971	32%	3,000	48%	525	9%	705	11%	6,201	100%
No	1,202	23%	2,951	57%	302	6%	701	14%	5,156	100%
Total	3,173	28%	5,951	52%	827	7%	1,406	12%	11,357	100%
Pearson chi2(3) = 152.0525 P=<0.001										

*Computed from household size and so 'others' may include a number of individuals including but not limited to siblings, children, grandchildren, great-grandchildren, lodgers, and friends. Appendix B has a breakdown of the frequencies within this category.
Sample includes individuals over the age of 60 in wave 9 of Understanding Society, rounded to the nearest whole percent. Results not weighted.
Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

This section provides both a useful background to the analysis presented in Study One (see Chapter Four) in presenting the bivariate associations between the model controls and life satisfaction as well as the differences between individuals in different household compositions. The following section continues to present descriptive analyses of those who are socially isolated (those who report having no friends, no family and report participating in no community groups).

10.1.3. Social Isolation

This section aims to add additional context to the analysis presented in Study One by exploring the experiences of the most isolated participants. Social isolation is taken here to mean a lack of social connections, measured as individuals who report having no family, no friends, and no membership in community organisations.

These variables are not exhaustive of every type of social network relationship. An individual could have a good network of colleagues, or neighbours. Alternatively, they may have few social relationships but not identify themselves as socially isolated. Moreover, responses to these survey questions are likely to vary between individuals. One individual may report having no family or friends for example because they think that they are not particularly close, yet another individual may have a broader boundary for inclusion (see section 1.3.1).

The socially isolated (who report having no family, no friends, and no membership in community organisations) only make up a small proportion of the overall sample (0.5%), just 54 individuals (See Table 10.17).

The low cell counts, associated with an examination of a small group, mean that the chi2 assumptions may be violated and thus conclusions should not be drawn without caution. As a result, some of the variables used in this analysis to explore the dynamics of this subgroup have been simplified, any cell counts where N=<10 have been omitted for anonymity reasons, and multivariate analyses have not been run due to the small population size. The distinct nature of this group merits their investigation regardless of these limitations.

Table 10.17: Frequencies for Socially Isolated Individuals

Non-residential Social Network Size		
	No.	Col %
Isolated	54	0.5%
Not Isolated	11,319	99.5%
Total	11,373	100%

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Those who are isolated share a few similar characteristics (See table 10.18). They tend to be older, 28% of isolated individuals are over the age of 81 in comparison to only 14% of those who are not isolated. Greater proportions of isolated individuals live in rented accommodation, with 82% of those who are not isolated owning their own home in comparison with just 69% of those who are isolated, and greater

proportions of those who are isolated are not educated to secondary school level. There is little difference between those who are retired and those who are not. Only 30% of those who are isolated lived alone, a similar proportion to those who are not isolated (28%). This highlights that individual can be isolated outside of their household but still have an active residential social network. The individuals who are isolated report having poor health and poor wellbeing in larger numbers than those who are not isolated, suggesting that poor health may limit one's ability to maintain non-residential social contacts. In fact, only 5% of those who report being socially isolated also report having excellent or very good health.

Table 10.18: Cross-tabulations for social isolation by various demographic variables

Social Isolation						
	Isolated		Not Isolated		Total	
	N	Col %	N	Col %	N	Col %
Age						
60-70	20	37%	6,003	53%	6,023	53%
71-80	19	35%	3,756	33%	3,775	33%
>=81	15	28%	1,560	14	1,575	14%
Total	54	100%	11,319	100%	11,373	100%
Pearson chi2(2) = 10.2637 P=<0.05						
Sex						
Male	34	63%	5,235	46%	5,269	46%
Female	20	37%	6,084	54%	6,104	54%
Total	54	100%	11,319	100%	11,373	100%
Pearson chi2(1) = 6.0375 P=<0.05						
Tenure						
Owned	37	69%	9,246	82%	9,283	82%
Rented	17	32%	2,043	18%	2,060	18%
Total	54	100%	11,289	100%	11,343	100%
Pearson chi2(1) = 6.4775 P=<0.05						
Education						
Below secondary education	32	74%	3,522	40%	3,554	40%
Secondary education or above	11	26%	5,365	60%	5,376	60%
Total	43	100%	8,887	100%	8,930	100%
Pearson chi2(1) = 21.6147 P=<0.001						
Employment						
Not retired	14	26%	2,718	24%	2,732	24%
Retired	40	74%	8,595	76%	8,635	76%
Total	54	100%	11,313	100%	11,367	100%
Pearson chi2(1) = 0.1063 P=0.744 (not significant to the 0.05%)						
Nationality						
Not born in UK	16	30%	1,378	12%	1,394	12%
Born in UK	37	70%	9,825	88%	9,862	88%
Total	53	100%	11,203	100%	11,256	100%
Pearson chi2(1) = 15.5564 P=<0.001						
Subjective Health Status						
Excellent/Very good	<10	5%	3,745	36%	3,747	36%
Good	10	24%	3,569	34%	3,579	34%
Fair/Poor	30	71%	3,165	30%	3,195	30%
Total	42	100%	10,479	100%	10,521	100%
Pearson chi2(2) = 35.9736 P=<0.001						
Long-standing illness or disability						
Yes	42	78%	6,159	55%	6,201	55%
No	12	22%	5,144	46%	5,156	45%
Total	54	100%	11,303	100%	11,357	100%
Pearson chi2(1) = 11.7580 P=<0.05						
Household Composition						
Alone	16	30%	3,159	28%	3,175	28%
Partner Only	19	35%	5,940	53%	5,959	52%
Others Only	10	19%	821	7%	831	7%
Partner and Others	<10	17%	1,399	12%	1,408	12%
Total	54	100%	11,319	100%	11,373	100%
Pearson chi2(3) = 13.2639 P=<0.05						
Satisfaction with Life						
Low Life Satisfaction	19	45%	2,105	20%	2,124	20%
High Life Satisfaction	23	55%	8,354	80%	8,377	80%
Total	42	100%	10,459	100%	10,501	100%

| Pearson chi2(1) = 16.3488 P=<0.001 |

Appendix D: Cross-tabulations of Friendship Network Attributes and Life satisfaction by Household Composition

Table 10.19: Individuals living Alone

	Subjective Wellbeing: Life satisfaction					
	Low Life Satisfaction		High Life Satisfaction		Total	
	No.	Row%	No.	Row%	No.	Row%
Proportion of Ego's Friends of a Similar Age to Ego						
Less than half	84	23%	290	78%	374	100%
About half	100	24%	323	76%	423	100%
More than half	177	20%	731	81%	908	100%
All similar	242	23%	826	77%	1,068	100%
Total	603	22%	2,170	78%	2,773	100%
Pearson chi2(3) = 4.2353 Pr = 0.237						
Proportion of Ego's Friends with Similar Level of Education to Ego						
Less than half	47	22%	171	78%	218	100%
About half	81	21%	309	79%	390	100%
More than half	157	20%	623	80%	780	100%
All similar	280	23%	950	77%	1,230	100%
Total	565	22%	2,053	78%	2,618	100%
Pearson chi2(3) = 2.1422 Pr = 0.543						
Proportion of Ego's Friends with Similar Income to Ego						
Less than half	146	27%	400	73%	546	100%
About half	103	19%	455	82%	558	100%
More than half	98	20%	396	80%	494	100%
All similar	98	21%	371	79%	469	100%
Total	445	22%	1,622	79%	2,067	100%
Pearson chi2(3) = 12.8369 Pr = 0.005						
Proportion of Ego's Friends who are also Family						
Less than half	258	22%	896	78%	1,154	100%
About half	110	22%	397	78%	507	100%
More than half	71	22%	257	78%	328	100%
All friends are family	59	24%	183	76%	242	100%
Total	498	22%	1,733	78%	2,231	100%
Pearson chi2(3) = 0.7929 Pr = 0.851						
Proportion of Ego's Friends Living In their Local Area						
Less than half or none live in the local area	162	22%	577	78%	739	100%
About half live in the local area	105	21%	387	79%	492	100%
More than half live in the local area	200	22%	719	78%	919	100%
All live in the local area	135	22%	489	78%	624	100%
Total	602	22%	2,172	78%	2,774	100%
Pearson chi2(3) = 0.0623 Pr = 0.996						
Proportion of Ego's Friends of the Same Ethnic Group as Ego						
Less than half	40	24%	130	77%	170	100%
About half	29	23%	98	77%	127	100%
More than half	134	23%	454	77%	588	100%
All similar	398	21%	1,483	79%	1,881	100%
Total	601	22%	2,165	78%	2,766	100%
Pearson chi2(3) = 1.1633 Pr = 0.762						
Number of hours spent interacting with friends through social websites						
None	27	26%	76	74%	103	100%
Less than an hour	94	23%	309	77%	403	100%
1-3 hours	38	22%	132	78%	170	100%
4 or more hours	<10	37%	12	63%	19	100%
Total	166	24%	529	76%	695	100%
Pearson chi2(3) = 2.3508 Pr = 0.503						

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Table 10.20: Individuals living with just a partner

| | Subjective Wellbeing: Life satisfaction | | | | | |
| | Low Life Satisfaction | | High Life Satisfaction | | Total | |
	No.	Row%	No.	Row%	No.	Row%
Proportion of Ego's Friends of a Similar Age to Ego						
Less than half	82	24%	255	76%	337	100%
About half	106	14%	664	86%	770	100%
More than half	288	14%	1,724	86%	2,012	100%
All similar	365	17%	1,845	84%	2,210	100%
Total	841	16%	4,488	84%	5,329	100%
Pearson chi2(3) = 25.0483 Pr = 0.000						
Proportion of Ego's Friends with Similar Level of Education to Ego						
Less than half	44	16%	232	84%	276	100%
About half	127	17%	635	83%	762	100%
More than half	266	15%	1,482	85%	1,748	100%
All similar	381	16%	2,051	84%	2,432	100%
Total	818	16%	4,400	84%	5,218	100%
Pearson chi2(3) = 0.8588 Pr = 0.835						
Proportion of Ego's Friends with Similar Income to Ego						
Less than half	167	20%	657	80%	824	100%
About half	193	15%	1,074	85%	1,267	100%
More than half	176	14%	1,125	87%	1,301	100%
All similar	149	16%	764	84%	913	100%
Total	685	16%	3,620	84%	4,305	100%
Pearson chi2(3) = 17.7565 Pr = 0.000						
Proportion of Ego's Friends who are also Family						
Less than half	365	15%	2,123	85%	2,488	100%
About half	174	16%	895	84%	1,069	100%
More than half	139	19%	599	81%	738	100%
All friends are family	65	18%	292	82%	357	100%
Total	743	16%	3,909	84%	4,652	100%
Pearson chi2(3) = 9.0502 Pr = 0.029						
Proportion of Ego's Friends Living In their Local Area						
Less than half or none live in local area	229	18%	1,047	82%	1,276	100%
About half live in local area	163	15%	900	85%	1,063	100%
More than half live in local area	281	14%	1,789	86%	2,070	100%
All live in the local area	171	19%	755	82%	926	100%
Total	844	16%	4,491	84%	5,335	100%
Pearson chi2(3) = 17.2273 Pr = 0.001						
Proportion of Ego's Friends of the Same Ethnic Group as Ego						
Less than half	44	19%	192	81%	236	100%
About half	33	23%	112	77%	145	100%
More than half	191	14%	1,165	86%	1,356	100%
All similar	574	16%	3,023	84%	3,597	100%
Total	842	16%	4,492	84%	5,334	100%
Pearson chi2(3) = 9.7823 Pr = 0.021						
Number of hours spent interacting with friends through social websites						
None	37	13%	242	87%	279	100%
Less than an hour	179	16%	970	84%	1,149	100%
1-3 hours	62	17%	295	83%	357	100%
4 or more hours	19	30%	45	70%	64	100%
Total	297	16%	1,552	84%	1,849	100%
Pearson chi2(3) = 11.0854 Pr = 0.011						

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Table 10.21: Individuals living with just others

| | Subjective Wellbeing: Life satisfaction | | | | | |
| | Low Life Satisfaction | | High Life Satisfaction | | Total | |
	No.	Row%	No.	Row%	No.	Row%
Proportion of Ego's Friends of a Similar Age to Ego						
Less than half	27	33%	55	67%	82	100%
About half	34	32%	71	68%	105	100%
More than half	40	23%	136	77%	176	100%
All similar	82	33%	164	67%	246	100%
Total	183	30%	426	70%	609	100%
Pearson chi2(3) = 6.3458 Pr = 0.096						
Proportion of Ego's Friends with Similar Level of Education to Ego						
Less than half	16	35%	30	65%	46	100%
About half	30	28%	76	72%	106	100%
More than half	46	28%	119	72%	165	100%
All similar	78	30%	184	70%	262	100%
Total	170	29%	409	71%	579	100%
Pearson chi2(3) = 0.9053 Pr = 0.824						
Proportion of Ego's Friends with Similar Income to Ego						
Less than half	38	29%	92	71%	130	100%
About half	46	34%	90	66%	136	100%
More than half	41	38%	66	62%	107	100%
All similar	20	23%	67	77%	87	100%
Total	145	32%	315	69%	460	100%
Pearson chi2(3) = 5.8742 Pr = 0.118						
Proportion of Ego's Friends who are also Family						
Less than half	78	31%	172	69%	250	100%
About half	32	30%	76	70%	108	100%
More than half	25	32%	54	68%	79	100%
All friends are family	22	33%	45	67%	67	100%
Total	157	31%	347	69%	504	100%
Pearson chi2(3) = 0.2145 Pr = 0.975						
Proportion of Ego's Friends Living In their Local Area						
Less than half or none live in local area	57	29%	137	71%	194	100%
About half live in local area	28	23%	92	77%	120	100%
More than half live in local area	59	34%	116	66%	175	100%
All live in the local area	39	33%	81	68%	120	100%
Total	183	30%	426	70%	609	100%
Pearson chi2(3) = 4.0773 Pr = 0.253						
Proportion of Ego's Friends of the Same Ethnic Group as Ego						
Less than half	20	47%	23	54%	43	100%
About half	12	29%	29	71%	41	100%
More than half	42	29%	102	71%	144	100%
All similar	109	29%	271	71%	380	100%
Total	183	30%	425	70%	608	100%
Pearson chi2(3) = 5.9399 Pr = 0.115						
Number of hours spent interacting with friends through social websites						
None	11	32%	23	68%	34	100%
Less than an hour	41	39%	65	61%	106	100%
1-3 hours	17	43%	23	58%	40	100%
4 or more hours	<10	25%	<10	75%	12	100%
Total	72	38%	120	63%	192	100%
Pearson chi2(3) = 1.6739 Pr = 0.643						

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Table 10.22: Crosstabulations for Friendship Network Attribute by Subjective Wellbeing (Individuals living with just a partner and others)

| | Subjective Wellbeing: Life satisfaction | | | | | |
| | Low Life Satisfaction | | High Life Satisfcation | | Total | |
	No.	Row%	No.	Row%	No.	Row%
Proportion of Ego's Friends of a Similar Age to Ego						
Less than half	24	21%	90	79%	114	100%
About half	50	26%	142	74%	192	100%
More than half	95	23%	317	77%	412	100%
All similar	111	24%	344	76%	455	100%
Total	280	24%	893	76%	1,173	100%
Pearson chi2(3) = 1.2148 Pr = 0.749						
Proportion of Ego's Friends with Similar Level of Education to Ego						
Less than half	23	24%	75	77%	98	100%
About half	50	27%	138	73%	188	100%
More than half	76	21%	289	79%	365	100%
All similar	122	25%	364	75%	486	100%
Total	271	24%	866	76%	1,137	100%
Pearson chi2(3) = 3.0522 Pr = 0.384						
Proportion of Ego's Friends with Similar Income to Ego						
Less than half	49	25%	147	75%	196	100%
About half	75	26%	211	74%	286	100%
More than half	61	21%	224	79%	285	100%
All similar	45	22%	159	78%	204	100%
Total	230	24%	741	76%	971	100%
Pearson chi2(3) = 2.3264 Pr = 0.507						
Proportion of Ego's Friends who are also Family						
Less than half	120	23%	414	78%	534	100%
About half	55	25%	167	75%	222	100%
More than half	46	29%	113	71%	159	100%
All friends are family	26	26%	74	74%	100	100%
Total	247	24%	768	75.70%	1,015	100%
Pearson chi2(3) = 3.0044 Pr = 0.391						
Proportion of Ego's Friends Living In their Local Area						
Less than half or none live in local area	82	25%	251	75%	333	100%
About half live in local area	55	27%	151	73%	206	100%
More than half live in local area	101	24%	326	76%	427	100%
All live in the local area	43	21%	165	79%	208	100%
Total	281	24%	893	76%	1,174	100%
Pearson chi2(3) = 2.1856 Pr = 0.535						
Proportion of Ego's Friends of the Same Ethnic Group as Ego						
Less than half	14	19%	58	81%	72	100%
About half	19	26%	55	74%	74	100%
More than half	76	22%	271	78%	347	100%
All similar	170	25%	509	75%	679	100%
Total	279	24%	893	76%	1,172	100%
Pearson chi2(3) = 2.1583 Pr = 0.540						
Number of hours spent interacting with friends through social websites						
None	18	21%	69	79%	87	100%
Less than an hour	57	22%	203	78%	260	100%
1-3 hours	21	25%	62	75%	83	100%
4 or more hours	<10	14%	19	86%	22	100%
Total	99	22%	353	78%	452	100%
Pearson chi2(3) = 1.5142 Pr = 0.679						

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Appendix E: Model Variation Robustness Checks for Study One

Table 10.23: Robustness checks

Model Code		Full Sample	Alone	Partner Only	Others Only	Partner and Others
Model One	Number of Close Friends (Reference category= No close friends)					
global isnsize "i.frisizecat famsizenum numberactive"	1 Close Friend	1.737**	2.043*	1.823*	1.193	1.324
		[0.342]	[0.579]	[0.447]	[0.204]	[0.330]
	2-5 Close Friends	1.418*	1.522*	1.444*	2.334***	0.957
		[0.194]	[0.301]	[0.255]	[0.292]	[0.136]
global control "i.age i.sex i.education i.tenure i.employment i.nationality i.health i.health_sub"	6-10 Close Friends	1.913***	1.787**	1.842**	3.541***	2.017***
		[0.280]	[0.379]	[0.344]	[0.572]	[0.324]
	>11 Close Friends	2.135***	2.451***	2.286***	1.689**	1.368
		[0.360]	[0.641]	[0.478]	[0.275]	[0.255]
	Number of Non-residential Family Members					
svy: logistic lifesat $isnsize $control		1.009	1.006	1.010	0.972***	1.024*
		[0.006]	[0.008]	[0.007]	[0.006]	[0.010]
	Number of Organisations Active In (reference is active in no organisations)					
	Active in one organisation	1.470***	1.691***	1.337**	0.803*	1.542***
		[0.115]	[0.198]	[0.127]	[0.079]	[0.156]
	Active in two or more organisations	1.325**	1.166	1.395**	1.021	1.541***
		[0.125]	[0.144]	[0.156]	[0.124]	[0.157]
Model Two	Number of Close Friends (Reference category= No close friends)					
global isnsize "i.frisizecat famsizenum organum"	1 Close Friend	1.803**	2.158**	1.853*	1.138	1.404
		[0.352]	[0.603]	[0.453]	[0.189]	[0.347]
	2-5 Close Friends	1.476**	1.589*	1.481*	2.182***	1.022
		[0.201]	[0.306]	[0.262]	[0.278]	[0.147]
global control "i.age i.sex i.education i.tenure i.employment i.nationality i.health i.health_sub"	6-10 Close Friends	2.003***	1.923**	1.894***	3.323***	2.180***
		[0.292]	[0.395]	[0.355]	[0.544]	[0.343]
	>11 Close Friends	2.226***	2.560***	2.366***	1.605**	1.434
		[0.372]	[0.653]	[0.494]	[0.264]	[0.267]
	Number of Non-residential Family Members					
svy: logistic lifesat $isnsize $control		1.009	1.004	1.010	0.972***	1.027*
		[0.006]	[0.008]	[0.007]	[0.006]	[0.011]
	Number of Organisations Active In					
	Active in one organisation	1.100**	1.070	1.108*	1.024	1.156***
		[0.040]	[0.057]	[0.044]	[0.044]	[0.048]
Model Three						
global isnsize "i.frisizecat i.famsizecat numberactive"	1 Close Friend	1.761**	2.101**	1.827*	1.172	1.295
		[0.345]	[0.589]	[0.447]	[0.221]	[0.325]
	2-5 Close Friends	1.431**	1.541*	1.440*	2.207***	0.941
		[0.196]	[0.301]	[0.255]	[0.259]	[0.139]
global control "i.age i.sex i.education i.tenure i.employment i.nationality i.health i.health_sub"	6-10 Close Friends	1.929***	1.851**	1.827**	3.484***	1.993***
		[0.284]	[0.388]	[0.343]	[0.553]	[0.333]
	>11 Close Friends	2.158***	2.546***	2.279***	1.680**	1.328
		[0.364]	[0.664]	[0.476]	[0.277]	[0.254]
	Number of Non-residential Family Members (reference is no family members)					
	1 family member	1.161	1.245	1.184	0.847	1.117
svy: logistic lifesat $isnsize $control		[0.199]	[0.299]	[0.287]	[0.111]	[0.214]
	2-5 family members	1.119	1.002	1.217	0.712*	1.217
		[0.152]	[0.196]	[0.199]	[0.097]	[0.225]
	6-10 family members	1.242	1.174	1.261	1.207	1.323
		[0.169]	[0.222]	[0.205]	[0.117]	[0.249]
	More than 11 family members	1.232	1.037	1.284	0.553***	1.947**
		[0.172]	[0.208]	[0.225]	[0.070]	[0.406]
	Number of Organisations Active In					
		1.197***	1.153*	1.201***	0.969	1.290***
		[0.056]	[0.075]	[0.066]	[0.062]	[0.067]

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and
Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Appendix F: Multicollinearity Checks for Study One

It is important to test for multicollinearity between the variables utilised in Study
One. Table 10.24 displays a correlation matrix of the variables used in Study One.

Table 10.24: Correlation Matrix of Control Variables (wave 9 full sample)

	Age	Sex	Tenure	Education	Employment	Nationality	Subjective Health	Illness	Subjective Wellbeing	Household composition
Age	1.0									
Sex	0.01	1.0								
Tenure	-0.09	-0.02	1.0							
Education	-0.18	-0.06	-0.12	1.0						
Employment	0.34	0.05	-0.03	-0.19	1.0					
Nationality	0.04	0.01	-0.09	-0.08	0.0	1.0				
Subjective Health	-0.10	0.01	0.15	0.18	-0.17	0.05	1.0			
Illness	-0.15	-0.02	0.12	0.10	-0.18	-0.01	0.5	1.0		
Subjective Wellbeing	0.07	-0.01	-0.16	0.06	-0.02	0.04	0.28	0.15	1.0	
Household Composition	-0.25	-0.12	0.01	0.07	-0.19	-0.12	0.15	0.06	-0.04	1.0

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and
Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

The majority of these variables are not highly correlated (score<0.3) and thus not of
concern. However, age has a high correlation score with employment, likely due to
similar retirement ages of many in the sample. Moreover, subjective health status is
highly correlated with the presence of an illness or disability due to people
accurately predicting their own health. These both have correlation scores above
0.4 and thus have been investigated further, see table 10.25. However, the variance
inflation factors are below 10 and the VIF scores are higher than the tolerance
scores (Longhi and Nandi 2015). No variables have therefore been excluded from
the models used in Study One.

Table 10.25: Multi-collinearity test statistics (full sample)

Control Variables	VIF (1/tolerance)	SQRT VIF	Tolerance (1 – r2)	R2
Age	1.4	1.18	0.71	0.29
Sex	1.0	1.00	0.99	0.00
Tenure	1.12	1.06	0.89	0.11
Education	1.11	1.06	0.90	0.10
Employment	1.35	1.16	0.74	0.26
Nationality	1.02	1.01	0.98	0.02
Subjective Health Status	1.44	1.20	0.69	0.31
Illness	1.34	1.16	0.75	0.25
Life satisfaction	1.11	1.05	0.90	0.10
Household Composition	1.21	1.1	0.83	0.17

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-9, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Appendix G: Evidence of Ethical Approval for Study One

30672 - Social networks and well-being in later life: understanding the role of neighbourhood

Submission Overview | **Submission Questionnaire** | **Attachments** | **History**

Details

Status	Approved
Category	Category B
Submitter's Faculty	Faculty of Social Sciences (FSS)

The end date for this study is currently 31 October 2021

📅 Request extension

If you are making any other changes to your study please create an amendment using the button below.

Appendix H: Stepwise Binary Logistic Regression Models for Social Network Size and Life satisfaction (Full sample, Wave Nine).

Table 10.26 shows how the variables included in the models In Study One vary as each is added in a stepwise fashion. The inclusion of family network size makes little difference to the odds ratio of friendship network size on wellbeing, however the inclusion of community network size marginally reduces the effect of friendship network size on life satisfaction, although both variables retain their significance.

Table 10.26: Stepwise Binary Logistic Regression Models for Social Network Size and Life satisfaction (Full sample, Wave 9).

	1	2	3	4	5	6	7	8	9	10	11
Number of Close Friends (no close friends is reference category).											
1	1.657**	1.645**	1.511*	1.581**	1.574**	1.792**	1.833**	1.812**	1.818**	1.829**	1.721**
	[0.266]	[0.266]	[0.247]	[0.261]	[0.260]	[0.328]	[0.342]	[0.351]	[0.352]	[0.353]	[0.339]
2-5	1.752***	1.730***	1.457***	1.571***	1.563***	1.598***	1.564***	1.495**	1.500**	1.472**	1.405*
	[0.191]	[0.191]	[0.164]	[0.177]	[0.177]	[0.202]	[0.196]	[0.194]	[0.194]	[0.193]	[0.193]
6-10	2.807***	2.770***	2.190***	2.341***	2.331***	2.361***	2.228***	2.114***	2.118***	2.008***	1.900***
	[0.331]	[0.330]	[0.267]	[0.288]	[0.287]	[0.319]	[0.301]	[0.296]	[0.297]	[0.284]	[0.279]
>=11	2.941***	2.914***	2.246***	2.386***	2.384***	2.447***	2.350***	2.265***	2.261***	2.273***	2.126***
	[0.416]	[0.415]	[0.326]	[0.348]	[0.348]	[0.393]	[0.376]	[0.370]	[0.370]	[0.378]	[0.360]
Number of Non-Residential Family Members											
1		1.247	1.233	1.308	1.307	1.258	1.274	1.254	1.243	1.236	1.159
		[0.186]	[0.186]	[0.197]	[0.197]	[0.209]	[0.214]	[0.211]	[0.208]	[0.206]	[0.198]
2-5		1.193	1.140	1.191	1.187	1.238	1.230	1.234	1.230	1.250	1.115
		[0.147]	[0.140]	[0.147]	[0.146]	[0.168]	[0.168]	[0.169]	[0.168]	[0.168]	[0.151]
6-10		1.359*	1.315*	1.307*	1.303*	1.322*	1.322*	1.336*	1.331*	1.353*	1.242
		[0.171]	[0.164]	[0.163]	[0.162]	[0.179]	[0.181]	[0.182]	[0.180]	[0.181]	[0.168]
>=11		1.117	1.106	1.057	1.051	1.151	1.238	1.261	1.259	1.284	1.230
		[0.145]	[0.142]	[0.136]	[0.134]	[0.159]	[0.174]	[0.178]	[0.177]	[0.178]	[0.172]
Number of Organisations Active In (active in no organisations is reference category)											
1			1.713***	1.678***	1.678***	1.618***	1.547***	1.559***	1.558***	1.550***	1.470***
			[0.114]	[0.113]	[0.113]	[0.121]	[0.117]	[0.118]	[0.118]	[0.117]	[0.115]
>=2			1.931***	1.870***	1.869***	1.698***	1.607***	1.577***	1.570***	1.549***	1.320**
			[0.155]	[0.152]	[0.152]	[0.149]	[0.144]	[0.142]	[0.142]	[0.142]	[0.125]
Age (reference category is 60-65)											
66-70				1.489***	1.489***	1.545***	1.434***	1.155	1.155	1.181	1.120
				[0.119]	[0.119]	[0.132]	[0.125]	[0.113]	[0.112]	[0.114]	[0.111]
71-75				1.671***	1.671***	1.875***	1.714***	1.326**	1.323**	1.393**	1.301*
				[0.135]	[0.135]	[0.174]	[0.163]	[0.140]	[0.139]	[0.147]	[0.139]
76-80				1.768***	1.769***	1.754***	1.611***	1.231	1.239	1.334*	1.300*
				[0.171]	[0.171]	[0.191]	[0.177]	[0.152]	[0.153]	[0.166]	[0.169]
81-85				1.834***	1.831***	2.221***	1.989***	1.478*	1.477*	1.674***	1.636**
				[0.221]	[0.220]	[0.309]	[0.281]	[0.225]	[0.225]	[0.260]	[0.262]
>=86				1.651***	1.644***	1.840***	1.626**	1.206	1.210	1.421*	1.538*
				[0.235]	[0.234]	[0.303]	[0.274]	[0.214]	[0.214]	[0.253]	[0.287]
Sex (reference category is Male)											
Female					1.036	1.036	1.029	1.048	1.048	1.059	1.019
					[0.057]	[0.064]	[0.065]	[0.067]	[0.067]	[0.069]	[0.068]
Education (reference category = None of the Above)											

Secondary Education						1.048	0.957	0.924	0.931	0.929	0.869
						[0.076]	[0.071]	[0.070]	[0.071]	[0.071]	[0.068]
Tertiary Education						1.393***	1.218*	1.172	1.195	1.169	1.016
						[0.130]	[0.118]	[0.116]	[0.120]	[0.119]	[0.105]
Tenure (reference category = owned outright)											
Owned w. Mortgage							0.722***	0.728**	0.732**	0.744**	0.777*
							[0.071]	[0.073]	[0.074]	[0.077]	[0.082]
Rent from LA or HA+							0.538***	0.604***	0.607***	0.678***	0.819*
							[0.048]	[0.056]	[0.057]	[0.063]	[0.078]
Private Rent or Other							0.603***	0.637**	0.641**	0.663**	0.773
							[0.091]	[0.100]	[0.100]	[0.105]	[0.126]
Employment (reference category = in employment)											
Other								0.582*	0.579*	0.647	0.709
								[0.139]	[0.138]	[0.150]	[0.164]
Retired								1.218*	1.216*	1.349**	1.531***
								[0.114]	[0.114]	[0.127]	[0.149]
Unemployed								1.022	1.042	1.145	1.419
								[0.348]	[0.356]	[0.390]	[0.500]
Sick/disabled								0.219***	0.219***	0.316***	0.474***
								[0.045]	[0.045]	[0.066]	[0.097]
Nationality (reference category = not British Born)											
British Born									1.210	1.226	1.171
									[0.144]	[0.141]	[0.136]
Long-standing illness or Disability (reference category = Yes)											
No										2.215***	1.208*
										[0.155]	[0.100]
Subjective Health Status (reference category = Excellent/ very Good)											
Good											2.957***
											[0.253]
Fair/Poor											4.782***
											[0.496]
_cons	1.99	1.67	1.54	1.54	1.022	0.902	1.287	1.428	1.189	0.750	0.503
N	10626	10626	10572	10572	10572	8684	8677	8676	8668	8658	8656
Model Fit											
F adjusted test statistics	F(4,1914) = 0.000	F(8,1910) = 0.297	F(9,1903) = 0.603	F (9,1903) = 1.063	F(9,1903) = 1.378	F(9,1615) = 2.165	F(9,1614) = 1.589	F(9,1613) = 1.240	F(9,1607) = 1.286	F(9,1606) = 0.859	F(9,1605) = 1.432
Prob > F =	1.000	0.967	0.795	0.387	0.192	0.022	0.113	0.266	0.239	0.562	0.169

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614

Outputs are weighted. Exponentiated Coefficients. Standard errors in brackets. + Housing Association. *** p<0.001, ** p<0.01, * p<0.05

Appendix I: Comparison of Dropouts due to non-completion

Table 10.38 displays cross-tabulations between response in the survey waves and various demographic variables, to show potential sample biases. Those who were present in both timepoints, were marginally more likely to be owner occupiers, than those present in just one of the two timepoints, perhaps reflective of the relative stability of this tenure. The individuals who responded at timepoint one and then not again at timepoint two had worse health than those who continued to respond to the survey. This is not unsurprising as poor health may lead to mortality and therefore non-response or a lack of willingness or ability to respond to the survey – despite the availability of proxy survey responses in Understanding Society. The individuals who failed to respond to time point two were also older than those who responded at both timepoints and just at timepoint two. There was little observed gender difference.

Those who only responded at the second timepoint were less likely to live alone, this is likely a product of the fact that one of the mechanisms with which new additions to the survey are included is through moving into the household of an established survey respondent. These individuals were also much more likely to not be British born, be more highly education, in employment and to be younger than those who responded at both timepoints and only at timepoint one.

Table 10.27: Demographic comparisons between those present in both waves and those excluded as present in either only wave one or two.

	Present in both waves and thus used in main analysis		Present only in timepoint 2 (wave 9)		Present only in timepoint one (wave 3)		Total	
Age	No.	Col %	No.	Col %	No.	Col %	No.	Col %
60-65	3,016	20%	432	41%	1,607	25%	5,055	23%
66-70	4,371	29%	235	22%	1,230	19%	5,836	26%
71-75	3,370	23%	151	14%	1,198	19%	4,719	21%
76-80	2,165	15%	128	12%	1,033	16%	3,326	15%
81-85	1,213	8%	74	7%	825	13%	2,112	9%
>=86	719	5%	36	3%	562	9%	1,317	6%
Total	14,854	100%	1,056	100%	6,455	100%	22,365	100%
Pearson chi2(10) = 704.7011 Pr = 0.000								
Sex	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Male	6,822	46%	540	51%	3,003	47%	10,365	46%
Female	8,032	54%	516	49%	3,452	54%	12,000	54%
Total	14,854	100%	1,056	100%	6,455	100%	22,365	100%
Pearson chi2(2) = 10.8742 Pr = 0.004								
Tenure	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Owned outright	11,060	75%	612	58%	4,289	67%	15,961	72%
Owned with mortgage	1,330	9%	165	16%	602	9%	2,097	9%
Rent from local authority or housing association	1,859	13%	210	20%	1,216	19%	3,285	15%
Rented from employer, Private rent or Other	586	4%	64	6%	345	5%	995	5%
Total	14,835	100%	1,051	100%	6,452	100%	22,338	100%
Pearson chi2(6) = 284.6409 Pr = 0.000								
Education	No.	Col %	No.	Col %	No.	Col %	No.	Col %
None of the above	4,951	44%	305	37%	2,973	58%	8,229	48%
Secondary education	4,397	39%	340	41%	1,627	32%	6,364	37%
Tertiary education	1,960	17%	182	22%	540	11%	2,682	16%
Total	11,308	100%	827	100%	5,140	100%	17,275	100%
Pearson chi2(4) = 351.7264 Pr = 0.000								
Employment	No.	Col %	No.	Col %	No.	Col %	No.	Col %
In employment	2,103	14%	246	23%	783	12%	3,132	14%

Other	180	1%	41	4%	143	2%	364	2%
Retired	12,329	83%	708	67%	5,262	82%	18,299	82%
Unemployed	69	1%	24	2%	47	1%	140	1%
Sick or disabled	168	1%	36	3%	220	3%	424	2%
Total	14,849	100%	1,055	100%	6,455	100%	22,359	100%
Pearson chi2(8) = 364.3608 Pr = 0.000								
Nationality	No.	Col %	No.	Col %	No.	Col %	No.	Col %
No	1,210	8%	462	44%	759	12%	2,431	11%
Yes	13,480	92%	590	56%	5,635	88%	19,705	89%
Total	14,690	100%	1,052	100%	6,394	100%	22,136	100%
Pearson chi2(2) = 1285.6121 Pr = 0.000								
Subjective Health Status	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Excellent/Very good	5,333	40%	258	31%	1,505	33%	7,096	38%
Good	4,413	33%	291	35%	1,327	29%	6,031	32%
Fair/Poor	3,568	27%	283	34%	1,751	38%	5,602	30%
Total	13,314	100%	832	100%	4,583	100%	18,729	100%
Pearson chi2(4) = 231.6491 Pr = 0.000								
Long-standing illness or disability	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Yes	8,105	55%	580	55%	3,993	62%	12,678	57%
No	6,735	45%	475	45%	2,453	38%	9,663	43%
Total	14,840	100%	1,055	100%	6,446	100%	22,341	100%
Pearson chi2(2) = 99.7759 Pr = 0.000								
Household Composition	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Alone	4,449	30%	160	15%	1,926	30%	6,535	29%
Partner Only	8,320	56%	468	44%	3,335	52%	12,123	54%
Others Only	813	6%	190	18%	528	8%	1,531	7%
Partner and Others	1,272	9%	238	23%	666	10%	2,176	10%
Total	14,854	100%	1,056	100%	6,455	100%	22,365	100%
Pearson chi2(6) = 561.1963 Pr = 0.000								

Note: those who did not age in place have not been excluded from this table, whereas individuals under the age of 60 at either timepoint one or two have been.

Appendix J: Comparison of Sample at T1 and T2

This section provides an analysis of the differences in the samples recorded at time point one and time point two in Study Two. As previously discussed, and anticipated, those at timepoint two are older, as they are being observed 6 years later and there are few individuals between the ages of 60-65 due to the omission of those under the age of 60 at timepoint one (see table 10.39).

There was no observed change in the number of people reporting being male or female, and very little observed change in education level. There are marginal increases in the number of people reporting that they own their house outright rather than with a mortgage which implies the key transition in tenure is individuals paying of the mortgages on their houses. The proportion of people in employment reduces from 21% at timepoint one two just 7% at timepoint two, whereas the proportion of people reporting that they are retired increases from 75% to 92% demonstrating a key move towards retirement.

The health status of those at time point two is worse, on average, than those at time point one. With 46% of individuals at timepoint one reporting that their health was either excellent or very good, yet only 35% of the same individuals reporting this at timepoint two. Parallel shifts are not seen for presence of a longstanding illness or disability. This matches the within variable change outlined in section 10.1.5. Moreover, there is little observed difference in life satisfaction at the sample level between the two timepoints. There is also very little observed change in the number of friends an individual has, the number of non-residential family members and the number of organisations an individual is active in.

Table 10.28: Comparison of those in timepoint one and timepoint two,
present in both waves those who didn't age in place not excluded

	Timepoint One (full)		Timepoint Two (full)		Total	
Age	No.	Col %	No.	Col %	No.	Col %
60-65	2,994	40%	22	0%	3,016	20%
66-70	1,924	26%	2,447	33%	4,371	29%
71-75	1,274	17%	2,096	28%	3,370	23%
76-80	767	10%	1,398	19%	2,165	15%
81-85	354	5%	859	12%	1,213	8%
>=86	114	2%	605	8%	719	5%
Total	7,427	100%	7,427	100%	14,854	100%
Pearson chi2(5) = 3921.1714 Pr = 0.000						
Sex	No.	Col %	No.	Col %	No.	Col %
Male	3,411	46%	3,411	46%	6,822	46%
Female	4,016	54%	4,016	54%	8,032	54%
Total	7,427	100%	7,427	100%	14,854	100%
Pearson chi2(1) = 0.0000 Pr = 1.000						
Tenure	No.	Col %	No.	Col %	No.	Col %
Owned outright	5,325	72%	5,735	77%	11,060	75%
Owned with mortgage	909	12%	421	6%	1,330	9%
Rent from local authority or housing association	903	12%	956	13%	1,859	13%
Rented from employer, Private rent or Other	288	4%	298	4%	586	4%
Total	7,425	100%	7,410	100%	14,835	100%
Pearson chi2(3) = 195.9213 Pr = 0.000						
Education	No.	Col %	No.	Col %	No.	Col %
None of the above	2,455	44%	2,496	44%	4,951	44%
Secondary education	2,193	39%	2,204	39%	4,397	39%
Tertiary education	974	17%	986	17%	1,960	17%
Total	5,622	100%	5,686	100%	11,308	
Pearson chi2(2) = 0.0783 Pr = 0.962						
Employment	No.	Col %	No.	Col %	No.	Col %
In employment	1,568	21%	535	7%	2,103	14%
Other	134	2%	46	1%	180	1%
Retired	5,538	75%	6,791	92%	12,329	83%
Unemployed	59	1%	10	0%	69	1%
Sick or disabled	128	2%	40	1%	168	1%
Total	7,427	100%	7,422	100%	14,849	100%
Pearson chi2(4) = 758.6685 Pr = 0.000						
Subjective Health Status	No.	Col %	No.	Col %	No.	Col %
Excellent/Very good	2,927	46%	2,406	35%	5,333	40%
Good	2,042	32%	2,371	34%	4,413	33%
Fair/Poor	1,423	22%	2,145	31%	3,568	27%
Total	6,392	100%	6,922	100%	13,314	100%
Pearson chi2(2) = 200.7459 Pr = 0.000						
Long-standing illness or disability	No.	Col %	No.	Col %	No.	Col %
Yes	3,823	52%	4,282	58%	8,105	55%

	No.	Col %	No.	Col %	No.	Col %
No	3,600	49%	3,135	42%	6,735	45%
Total	7,423	100%	7,417	100%	14,840	100%

Pearson chi2(1) = 58.0962 Pr = 0.000

Household Composition	No.	Col %	No.	Col %	No.	Col %
Alone	2,013	27%	2,436	33%	4,449	30%
Partner Only	4,276	58%	4,044	54%	8,320	56%
Others Only	387	5%	426	6%	813	6%
Partner and Others	751	10%	521	7%	1,272	9%
Total	7,427	100%	7,427	100%	14,854	100%

Pearson chi2(3) = 90.1459 Pr = 0.000

Life satisfaction	No.	Col %	No.	Col %	No.	Col %
Low Life Satisfaction	1,175	18%	1,210	18%	2,385	18%
High Life Satisfaction	5,203	82%	5,705	83%	10,908	82%
Total	6,378	100%	6,915	100%	13,293	100%

Pearson chi2(1) = 1.9261 Pr = 0.165

Friendship Network Size	No.	Col %	No.	Col %	No.	Col %
No close friends	445	6%	467	7%	912	6%
1 Close friend	503	7%	385	5%	888	6%
2-5 close friends	3,530	49%	3,480	48%	7,010	49%
6-10 close friends	2,006	28%	2,097	29%	4,103	28%
>11 close friends	755	10%	760	11%	1,515	11%
Total	7,239	100%	7,190	100%	14,429	100%

Pearson chi2(5) = 19.4361 Pr = 0.002

Community Network Size	No.	Col %	No.	Col %	No.	Col %
0 organisations	3,387	47%	3,303	46%	6,690	46%
1 organisation	1,910	27%	2,102	29%	4,012	28%
2-5 organisations	1,835	26%	1,817	25%	3,652	25%
6-10 organisations	69	1%	39	1%	108	1%
Total	7,201	100%	7,261	100%	14,462	100%

Pearson chi2(3) = 18.4166 Pr = 0.000

Appendix K: Justification of six-year time-period

To select an appropriate observation period, three or six years some exploratory models were run comparing the association between a transition into friendlessness on the likelihood of a transition from high to low life satisfaction across three years (wave six to wave nine) and the same association across six years (wave three to wave nine). The results of two fixed effects models across each timepoint are presented in the tables below. Table 10.40 displays the results for the association across a three-year observation window and table 10.41 presents the results across a six-year observation window. The six-year period was the one selected for the final models in Study Two presented in Chapter Five.

There are 3144 observations in the three-year model, comprised of 1572 individuals across two timepoints. In contrast the six-year period recorded slightly fewer observations (2708), comprised of 1354 individuals across two timepoints. Neither model reports a significant relationship between a transition into friendlessness and a transition into low life satisfaction with life across their respective time-periods. The odds ratios are slightly larger for the shorter time-period (1.351) than for the six-year time-period (1.176), but with slightly larger standard errors. The three-year observation window produced standard errors of 0.29, and the six-year time-period produced standard errors of 0.22.

With relatively little difference between the results of the empty models, the decision to opt for the longer time-period was made because larger numbers of individuals had experience of other time-invariant factors across the longer time-period and therefore these would be able to be more effectively controlled for. Events such as bereavement and retirement that would intuitively have both an impact on a transition into friendlessness and a transition into poor wellbeing were recorded at too few numbers across the three-year observation period for these to be efficiently included in the fixed effects models. However, across the long time-period more individual have recorded these changes and are these experiences are therefore able to be controlled for in the model more robustly.

Table 10.29: Fixed Effects Logit Models exploring the factors associated with a change from high to low life satisfaction across a three-year observation window – wave 6 to wave 9.

Friendship Network (Reference category = Has 1 or more close friends)	
No close friends	1.351
	(0.2931)
N (observations not groups)	3144
Pseudo R2	0.001
Log likelihood	-1088.6525

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Exponentiated Coefficients (odds ratios). Standard errors in brackets
*** p<0.001, ** p<0.01, * p<0.05

Table 10.30: Fixed Effects Logit Models exploring the factors associated with a change from high to low life satisfaction across a six-year observation window – wave 3 to wave 9.

Friendship Network (Reference category = Has 1 or more close friends)	
No close friends	1.176
	(0.224069)
N (observations not groups)	2708
Pseudo R2	0.000
Log likelihood	-938.1565

Source: Author's analysis of data from University of Essex (2017) Understanding Society: Waves 1-7, 2009-2018 and Harmonised BHPS: Waves 1-18, 1991-2009 SN:6614
Exponentiated Coefficients (odds ratios). Standard errors in brackets
*** p<0.001, ** p<0.01, * p<0.05

Appendix L: Variable Manipulation in Study Two

This section outlines the variables utilised in Study Two and how they are manipulated from the questions asked in Understanding Society. Table 10.42 provides an outline of the variable manipulations, and Table 10.43 provides frequencies for all variables used in Study Two. Do files demonstrating the manipulation of all variables used in Study Two can be found in Appendix N.

Table 10.42: Manipulation of all variables in Study Two

Variable (STATA Code)	Original U-Soc Variable	Variable Manipulation	Final Variable Coding
Subjective Wellbeing (lifesat)	Sclfsato = '"Here are some questions about how you feel about your life. Please choose the number which you feel best describes how dissatisfied or satisfied you are with the following aspects of your current situation: Your life overall".'	The seven-category variable (completely satisfied, mostly satisfied, somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied, mostly dissatisfied, completely dissatisfied) is simplified into a binary outcome of low and high life satisfaction. Neither satisfied nor dissatisfied (the middle category) is categorised as low life satisfaction.	Low life satisfaction = 0 High life satisfaction = 1
Friendship (friendless)	Closenum = 'How many close friends would you say you have?'	All participants that reported no friends when asked their number of close friends were coded as friendless.	No friends = 0 Friends = 1
Non-residential Family (havefam)	Lvrel 1,2 nrels 3,4,5,6,7 lvrel96 = 'We now have a few questions about contact you have with family members not living here with you. Excluding relatives who are living in this household with you at the moment, can you tell me which of these types of relatives you have alive at the moment? Mother, Father, Son/daughter, brother/sister, grandchildren, grandparents, step/adoptive mother, step/adoptive father, none of these'	Variables denoting the presence of living non-residential children, siblings, grandchildren, great-grandchildren, and parents were added with variables denoting the number of children, siblings, grandchildren, and great-grandchildren to generate a composite kin-size variable. This was simplified to become a binary variable capturing if a participant has one or more living family members or not. Family members living within the household are not included in this.	No family = 0 Family = 1
Community Group Activity (orga)	Orga 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16 = 'Whether you are a member or not, do you join in the activities of any of these organisations on a regular basis?'	Variables denoting active participation in one of 16 listed organisations were combined to create a composite community group activity variable.	Not active in community groups = 0 Active in one or more community groups = 1
Living Alone (livealone)	Hhsize = 'Calculated in the survey script by summing the number of individuals per household from the household grid. This may include absent household members.'	Recoded to be a binary variable that indicates if there a people present in the household or not.	Does not live alone = 0 Lives alone = 1
Retirement (retired)	Jbstat = 'Which of these, best describes your current employment situation?'	The possible employment categories are re-categorised into a binary variable, retired or not. All other employment statuses are subsumed into 'not retired'	Not retired = 0 Retired = 1
Bereavement (bereavement)	Marstat = 'What is your legal marital status?'	The possible marital status categories are re-categorised into a binary variable, bereaved or not. 'Surviving civil partnership' is categorised as widowed, all other marital statuses are subsumed into 'not bereaved'.	Not Bereaved = 0 Bereaved = 1

Self-reported health (health_sub)	Scsf1 = 'Self-reported Health Status	The five-category variable (excellent, very good, good, fair, poor) is simplified into a three-category variable.	Fair/Poor Self-reported Health = 1 Good Self-reported Health = 2 Excellent/Very good Self-reported Health = 3
Presence of an Illness or Disability (illness)	Health = 'Do you have any long-standing physical or mental impairment, illness or disability? By 'long-standing' I mean anything that has troubled you over a period of at least 12 months or that is likely to trouble you over a period of at least 12 months.'	No change	Does not have illness or disability = 0 Has illness or disability = 1

Source: Author's analysis of data from Author's creation

Table 10.31: Frequencies of all variables used in Study Two

Variable	Time Point Two Frequencies		
Time Point One Frequencies	Category One	Category Two	Category Three
Subjective Wellbeing	Low Satisfaction	High Satisfaction	
Low Satisfaction	385 (35%)	717 (65%)	
High Satisfaction	663 (13%)	4283 (87%)	
Total	1048 (17%)	5000 (83%)	
Friendship	No friends	Friends	
No friends	60 (21%)	228 (79%)	
Friends	184 (3%)	6417 (97%)	
Total	244 (4%)	6645 (96%)	
Non-residential Family	No family	Family	
No family	411 (21%)	1544 (79%)	
Family	218 (4%)	5254 (96%)	
Total	629 (8%)	6798 (92%)	
Community Group Activity	Not active in community groups	Active in one or more community groups	
Not active in community groups	2197 (66%)	1130 (34%)	
Active in one or more community groups	1001 (27%)	2761 (73%)	
Total	3198 (45%)	3891 (55%)	
Living Alone	Does not Live Alone	Lives alone	
Does not Live Alone	4877 (90%)	537 (10%)	
Lives alone	114 (6%)	1899 (94%)	
Total	4991 (67%)	2436 (33%)	
Retirement	Not retired	Retired	
Not retired	534 (28%)	1355 (72%)	
Retired	97 (2%)	5436 (98%)	
Total	631 (9%)	6791 (92%)	
Bereavement	Not Bereaved	Bereaved	
Not Bereaved	5483 (92%)	497 (8%)	
Bereaved	53 (4%)	1172 (96%)	
Total	5536 (77%)	1669 (23%)	
Self-reported health	Fair/Poor self-reported health	Good self-reported health	Excellent/Very Good self-reported health
Fair/Poor self-reported health	934 (72%)	288 (22%)	68 (5%)
Good self-reported health	573 (30%)	894 (46%)	458 (24%)
Excellent/Very Good self-reported health	297 (10%)	918 (32%)	1632 (57%)
Total	1804 (30%)	2100 (35%)	2158 (36%)
Presence of an Illness or Disability	Does not have illness or disability	Has illness or disability	
Does not have illness or disability	2234 (62%)	1360 (38%)	
Has illness or disability	898 (24%)	2921 (76%)	
Total	3132 (42%)	4281 (58%)	

Source: Author's analysis of data from Author's creation

Appendix M: Conditional Fixed and Random Effect Logit Models on full samples and just those who have aged in place.

Table 10.32: Conditional Fixed and Random Effects Logit Models exploring the factors associated with a change from having low satisfaction to having high satisfaction with life, across a six-year observation window, models with full samples and with just those who have aged in place.

	Model One: Conditional fixed effects with full sample	Model Two: Conditional fixed effects with those who aged in place	Model Three: Conditional random effects with full sample	Model Four: Conditional random effects with those who have aged in place
Friendship Network (Reference category= No close friends)				
Friendship	1.157	1.281	1.282	1.246
	[0.271]	[0.330]	[0.170]	[0.181]
Non-residential Family Network (reference category = No family members)				
Family	1.093	1.022	1.325***	1.319***
	[0.135]	[0.134]	[0.102]	[0.109]
Community Group Activity (reference is not active in community organisations)				
Active in one or more organisation	1.348**	1.322*	1.582***	1.612***
	[0.139]	[0.147]	[0.093]	[0.103]
Solo-Living (reference category = Does not lives alone)				
Live Alone	1.062	0.819	0.772***	0.782**
	[0.221]	[0.204]	[0.059]	[0.065]
Bereavement (reference category = Not bereaved)				
Bereaved	1.071	1.025	1.102	1.083
	[0.249]	[0.280]	[0.097]	[0.104]
Retirement (reference category = Not retired)				
Retirement	1.787***	1.536**	1.758***	1.687***
	[0.230]	[0.211]	[0.134]	[0.140]
Long-standing illness or Disability (reference category = Does not have an illness or disability)				
No	1.064	1.137	0.784***	0.801**
	[0.117]	[0.135]	[0.053]	[0.059]
Subjective Health Status (reference category = Fair/Poor)				
Good	2.200***	2.154***	3.288***	3.244***
	[0.281]	[0.298]	[0.247]	[0.264]
Excellent/very good	2.749***	2.641***	4.970***	5.062***
	[0.431]	[0.448]	[0.425]	[0.469]
Insig2u			1.292*	1.391*
			[0.165]	[0.183]
N	2614	2228	12956	11441
Pseudo R-sq	0.044	0.037		

Appendix N: COVID-19 Context

The first cases of the SARS-CoV-2 virus (otherwise known as COVID-19 or coronavirus) were identified by the World Health Organisation in December of 2019 (WHO, 2021). A pandemic was declared on the 11th of March (WHO, 2021), and the British government announced a national lock-down on the 23rd of the same month (Johnson, 2020). The first lock-down mandated that people could only leave their households for: necessities; one form of exercise per day; a medical need, to care for a vulnerable person, and/or to travel to or from work where this was necessary and could not be done at home. All non-essential socialisations places were closed, including libraries, places of worship, and hospitality venues. Individuals with particular health vulnerabilities were told to stay home 'all of the time' under a shielding policy that was introduced from the 21st of March (Department for Health and Social Care and UK Health Security Agency (UKHSA), 2020).

After around two months of restrictions these lock-down policies began to incrementally relax. On the 10th of May, people were able to exercise multiple times a day and encouraged to go to work if they could not do so at home. Support bubbles were introduced for single adult households in June and some venues such as hairdressers, pubs and gyms re-opened from the 4th of July. Shielding policies were relaxed from the 6th of July and ended on the 1st of August.

As cases began to rise again moving into the winter of 2020 lock-down policies like those implemented in March were once again mandated across England. September saw the introduction of 'the rule of six' limiting socialisation to groups of six, and in October the British Government announced a national tier system in which local authority areas were subject to various levels of social restriction. On the 5th of November a new 4-week lockdown was announced (Blackall, 2020). This was the same as the first lockdown with a few notable exceptions. The government introduced 'support bubbles', did not take steps to close schools and childcare services, did not reinstate the shielding scheme and allowed individuals to exercise outside with one person from another household.

Recruitment and data collection for the third research study (Chapter Six) was conducted just before the start of this four-week winter lockdown (19/10/20 – 5/11/20). So, this PhD and the voices articulated in the third research study encapsulate the mood of a community gearing up for a second national lock-down, after eight months of social restriction. Section 3.5 in the methods chapter includes a lengthier discussion of the methodological complications of collecting data during this period. The substantive implications of the pandemic context on the results are discussed thesis wide, but particularly highlighted in chapters Six and Seven.

Table 10.33: COVID-19 Pandemic Guidelines for Regional Tier Restrictions (At time of data collection Nov-Dec 2020)

	Tier One	Tier Two	Tier Three	Tier Four
Place of worship	Open, but cannot interact with over 6 people	Open but cannot interact with anyone outside household or support bubble	Open but cannot interact with anyone outside household or support bubble	Open but cannot interact with anyone outside household or support bubble
Retail	Open	Open	Open	Essential retail only
Personal care	Open	Open	Open	Closed
Indoor Leisure e.g., gyms, swimming	Open	Open	Open	Closed
Overnight stays	Permitted, with household, support bubble or up to 6 people	Permitted with household or support bubble	No overnight stays outside of local area, unless necessary for work, education, or similar reasons	Holidays or overnight stays away from home are not permitted unless there is a reasonable excuse to do so.
Meeting friends and family	Maximum of six indoors or outdoors, other than single households or support bubbles	No mixing of households indoors, apart from support bubbles. Maximum 6 outdoors	No mixing of households indoors, or most outdoor places, apart from support bubbles. Max six in some outdoors spaces (e.g., parks, sports courts)	No mixing of households indoors, or most outdoor places, apart from support bubbles. No more than 2 people from different households may meet in outdoors spaces (e.g., parks, sports courts)
Entertainment	Open	Open	Indoors venues closed	Closed
Bars, pubs, and restaurants	Venues must be table service only; they must stop taking orders at 10pm and must close by 11pm	Pubs and bars must close unless operating as restaurants. Hospitality venues can only serve alcohol with substantial meals. They must stop taking orders at 10pm and must close by 11pm	Hospitality is closed, with the exception of sales by takeaway, drive through or delivery	Hospitality is closed, with the exception of sales by takeaway, drive through or delivery
Accommodation	Open	Open	Closed (except with limited exceptions such as work purposes or where people cannot return home.	Closed (except with limited exceptions such as work purposes or where people cannot return home.
Travelling	Walk or cycle if possible. Avoid travel into Tier 3 areas (except where necessary, such as for work, education, medical attention, youth service or caring responsibilities).	Reduce the number of journeys made where possible. Avoid travel into Tier 3 areas (except where necessary, such as work, education, medical attention, youth services or caring responsibilities).	Avoid travelling out of the area, other than where necessary, such as work, education, medical attention, youth services or caring responsibilities. Reduce the number of journeys made where possible.	No Travel without reasonable excuse.
Weddings and funerals	15 guests for weddings, civil partnerships, wedding receptions and wakes; 30 for funerals.	15 guests for weddings, civil partnerships, wedding receptions and wakes; 30 for funerals.	15 guests for weddings, civil partnerships, and wakes; 30 for funerals. Wedding receptions not permitted.	Weddings can only take place in exceptional circumstances, and with a maximum of 6 guests. Funerals can be attended by a maximum of 30 people.
Exercise	Classes and organised adult sport can take place outdoors but must follow	Classes and organised adult sport can take place outdoors but cannot take place indoors if there is any	Classes and organised adult sport can take place outdoors, but people should avoid higher-risk contact	Outdoor sports courts, outdoor gyms, golf courses, outdoor swimming pools, archery/driving/shooting ranges, riding centres and

| the rule of six indoors. Organised activities for elite athletes, under 18s and disabled people can continue. | interaction between people from different households. Organised activities for elite athletes, under 18s and disabled people can continue. | activity. Group exercise activities and sports indoors should not take place unless with household or bubble. Organised activities for elite athletes, under 18s and disabled people can continue. | playgrounds can remain open for individual exercise, and for people to use with others from the same household, support bubble, or with one person from another household. Organised outdoor sport for under 18s and disabled people will be allowed. |

Source: Authors creation, adapted from (The Guardian, 2020)

Appendix O: Impact of COVID-19 on Individual Wellbeing

From the outset, public commentators, media outlets and government officials warned that the pandemic and the government lock-down policies it prompted might seriously threaten the mental and emotional wellbeing of the population. Both early descriptive statistics and subsequent peer-reviewed publications have since corroborated these concerns. There is strong evidence that the wellbeing of the British public did, on average, reduce during the COVID-19 pandemic. Research by (Pierce et al., 2020), (Etheridge and Spantig, 2020) and (Banks and Xu, 2020) utilised data in the UKHLS COVID-19 survey to assess changes in wellbeing (GHQ-12) at a population level. They found that the prevalence of clinically significant levels of mental distress rose from 18.9% in 2018/19 to 27.3% in April 2020. These findings were confirmed by Gray et al who measured wellbeing using the Warwick-Edinburgh Mental Wellbeing Survey (WEMWBS) and found a significant and large reduction in wellbeing in June and July of 2020 when compared to the same period in 2019 (Gray et al., 2020). It is , however, important to note that different events have been found to impact cognitive and affective wellbeing differently (Kettlewell et al., 2019), and therefore an impact on life satisfaction should not be conflated with similar impacts across other wellbeing indicators.

Average ratings across all measures of personal wellbeing recorded by the ONS hit a post pandemic low in the year ending March 2021. Despite some recovery the following year (ending March 2022), average wellbeing rates remain below their pre-pandemic levels (see figure 10.1).

Figure 10.1: UK Personal Wellbeing Estimates (Annual) from 2011 to
2022
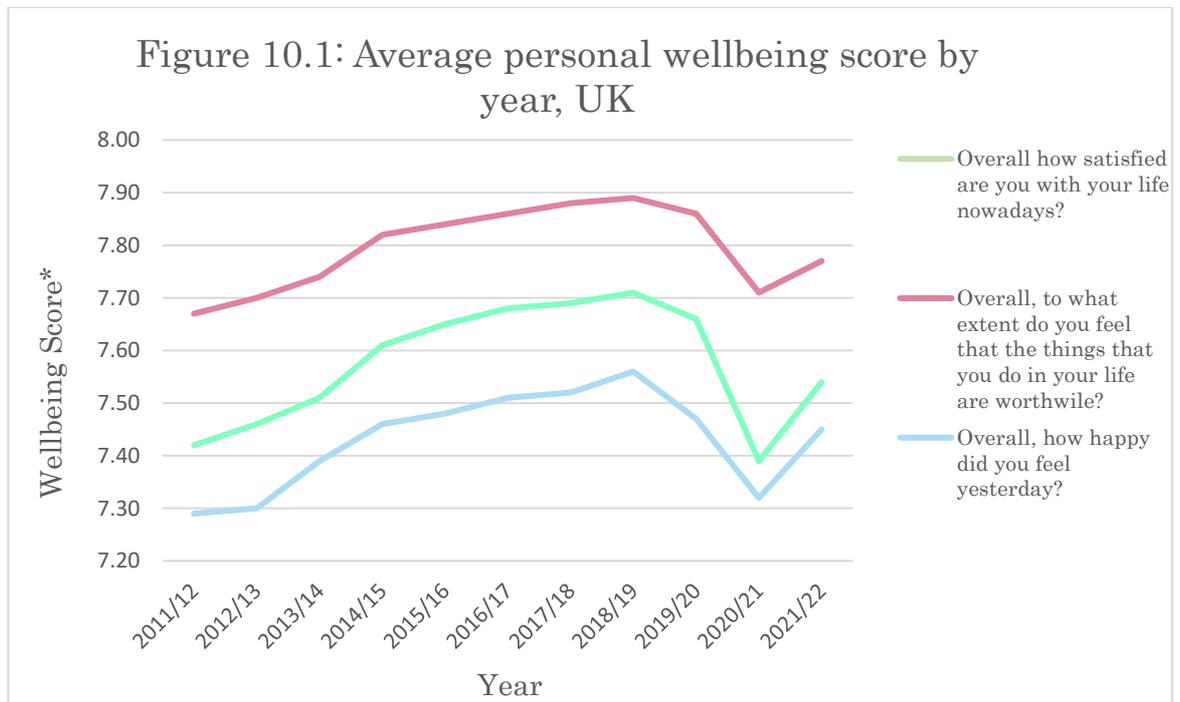
Figure 10.1: Average personal wellbeing score by year, UK

*Average (mean) ratings, score out of ten. Y axis is broken, meaning it does not start at one. Years ending in
March.

Source: Graph created by author using data from the Office for National Statistics(Office for National Statistics
(ONS), 2022b)

These trends are based on nationally representative samples of the UK population.
Respondents are asked the following questions annually: "Overall, how satisfied are
you with your lives nowadays" (Green line); "Overall, to what extent do you feel
that things that you do in your life are worthwhile?" (Yellow line); "How happy do
you feel yesterday?" (Blue line). Each question is answered on a scale of 0 – 10.
Please note that the y axis in figure 2.1 does not start at 0. When comparing the
average (mean) scores to each of these questions across time a steady increase
across all measures is found from the year ending March 2012 to the year ending
March 2019 (see figure 2.1). In just two years these gains are lost and despite
improvements the ratings have not, yet, returned to the pre-pandemic highs (see
figure 2.1). The scale of these wellbeing changes only seeks to highlight the
importance of learning from this unique period and using this knowledge to design
interventions to improve wellbeing resilience, a key aim of this thesis. This thesis is

exploring the wellbeing of older adults specifically, the next section will therefore continue to outline the research about how the pandemic may have impacted the wellbeing of older adults specifically.

Children, young people, and women were found to disproportionately experience a reduction in their wellbeing during the pandemic (Banks and Xu, 2020; Gray et al., 2020; Pierce et al., 2020). These are groups that saw their daily routines most significantly disrupted during the national lockdowns. Mandated school closures separated young people from their peer networks, and mothers were more likely than fathers to take on the extra burden of full-time childcare responsibilities alongside employment (Sevilla and Smith, 2020). It is easy to understand how these major disruptions and additional responsibilities might negatively impact the wellbeing of these sub-groups.

Older adults, on average, experienced more stable and less negative mental health outcomes during the pandemic than these sub-groups (Holingue et al., 2020). This is arguably an unintuitive finding as young adults were, on average, far less likely to be admitted to hospital and/or to die if they contracted COVID-19, than older adults (Atkins et al., 2020; WHO, 2019). Moreover, because of the significant health risks posed to older adults, they were in many cases subjective to more severe lock-down policies than those in other age groups. Fifty-nine per cent of those characterised as clinically extremely vulnerable and therefore encouraged to following the 'shielding' policies were aged over 60 (NHS Digital, 2021). Research has attributed these comparatively more stable wellbeing outcomes among older adults to several factors, each discussed in turn.

Research has highlighted that older adults tended to report higher levels of emotional wellbeing pre-pandemic (Charles and Carstensen, 2010) potentially meaning that they held a certain 'wellbeing buffer' to the negative impacts of the pandemic. Some have argued that older adults approached the pandemic with greater emotional resilience, built through previous experiences of global and

national crises (McKinlay et al., 2021). In fact, many media narratives likened the
COVID-19 Pandemic to the Second World War (Panzeri et al., 2021) and noted that
a generation of veterans were perhaps most adept at managing sudden and life-
threatening world events.

Research found that household size and occupation type were also associated with
wellbeing during the first lockdown (April to May 2020) (Chen and Wang, 2021).
Older adults may be more likely to hold financial wealth, to have stable living
situations and to be retired, meaning that they may be less likely to have
experienced disruptions to their living arrangements, working patterns and/or
financial security during the pandemic. ONS data finds that households where the
head is retired, tend to be wealthier, with lower expenditure and a more stable
primary income source than other household groups (Office for National Statistics
(ONS), 2022c). Research found that older age was associated with lower perceived
risks of running out of money during the pandemic (Bruine de Bruin, 2021).

It is important to note, however, that this is not the case for all older adults and
ONS data has found that as a result of the pandemic, 1 in 8 (13%) of workers aged
50 years and over say they have changed their retirement plans, with 5% saying
that they will retire earlier and 8% planning to retire later (Office for National
Statistics (ONS), 2021c). For those who are retiring later, one may presume they
may be doing so due to a degree of pandemic-induced financial vulnerability.
Moreover, research has found that the negative wellbeing impact of the pandemic
was far greater for individuals that regularly used social care systems and/or were
involved in care work, such as individuals living with dementia or caring for
individual living with dementia (Giebel et al., 2021; Hanna et al., 2021).

This thesis is not able to examine the wellbeing impact of the pandemic on older
adults with these financial or health system wellbeing-vulnerabilities. The first two
research studies utilise a nationally representative sample of older adults but paint
a picture of pre-pandemic wellbeing. The third research study captures a view of

wellbeing in the aftermath of the pandemic; however, all the participants are retired, independently living, homeowners who are not in receipt of social or nursing care. Section 3.5.3 provides a full discussion of the demographics of the sample in the third research study.

This sample was selected purposefully to be able to better isolate the impact of the changes to older adults' friendship patterns on their wellbeing. The assumption being that in a sample in which all other wellbeing vulnerabilities are presumed to be minimal, the impact of a change in one's social context may be more easily identified and discussed. This is a critical contribution to the literature. Findings about how to promote resilient friendship networks can then be applied to other groups of older adults with further research. This next section continues to outline the research and data on the impact that the COVID-19 pandemic had on the social interactions, networks, and relationships in the UK.

Appendix P: Evidence of Ethical Approval for Study Three

52824 - Social networks, well being and household composition in later life

Submission Overview | Submission Questionnaire | Attachments | History

Details

Status Approved
Category Category A
Submitter's Faculty Faculty of Social Sciences (FSS)

The end date for this study is currently 30 September 2021

Request extension

If you are making any other changes to your study please create an amendment using the button below.

Appendix Q: Recruitment Flyer for Study Three

Let's have a chat …

Hi, I am Ella. A final year PhD student from the University of Southampton
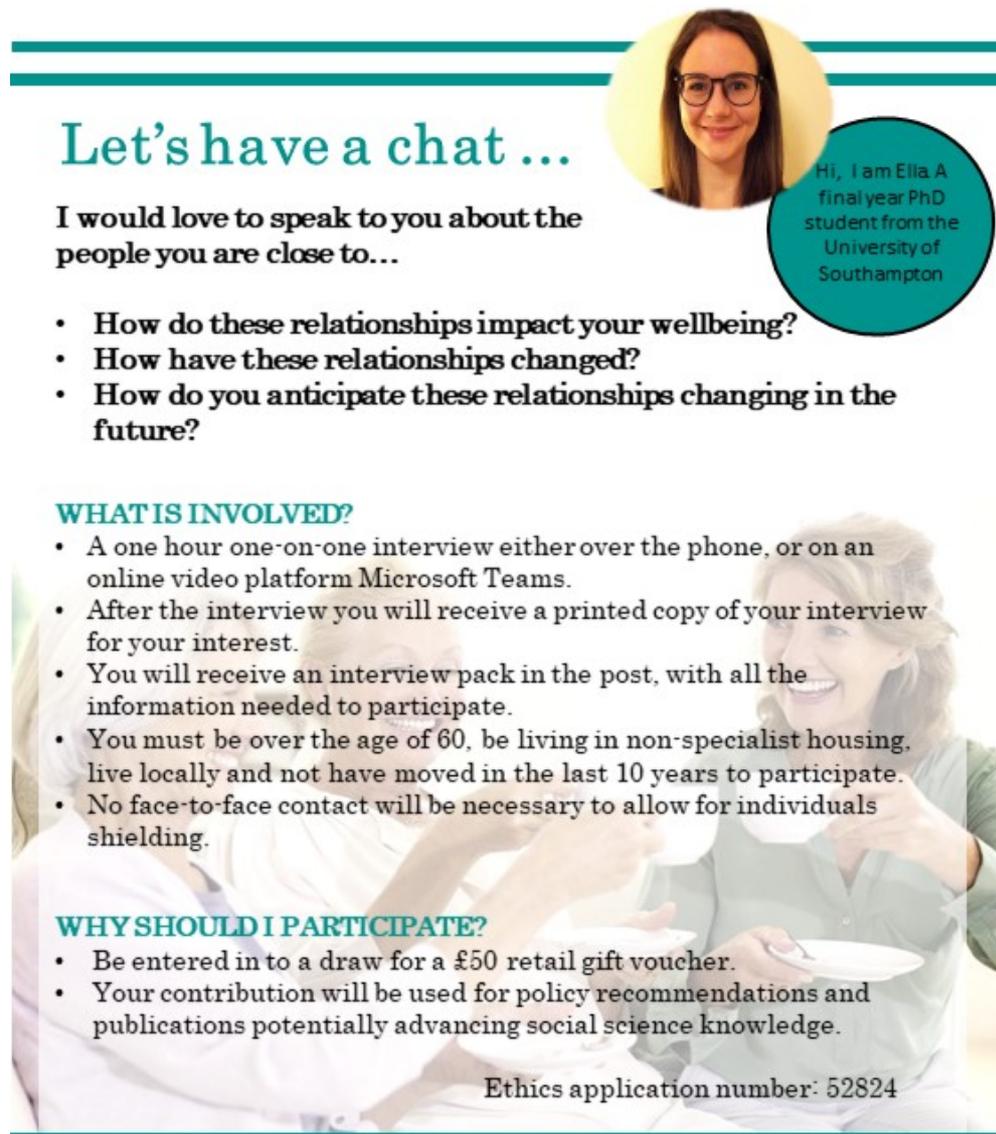
I would love to speak to you about the people you are close to…

- How do these relationships impact your wellbeing?
- How have these relationships changed?
- How do you anticipate these relationships changing in the future?

WHAT IS INVOLVED?
- A one hour one-on-one interview either over the phone, or on an online video platform Microsoft Teams.
- After the interview you will receive a printed copy of your interview for your interest.
- You will receive an interview pack in the post, with all the information needed to participate.
- You must be over the age of 60, be living in non-specialist housing, live locally and not have moved in the last 10 years to participate.
- No face-to-face contact will be necessary to allow for individuals shielding.

WHY SHOULD I PARTICIPATE?
- Be entered in to a draw for a £50 retail gift voucher.
- Your contribution will be used for policy recommendations and publications potentially advancing social science knowledge.

Ethics application number: 52824

SC.DTP. South Coast Doctoral Training Partnership   CPC CENTRE FOR POPULATION CHANGE   E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL   UNIVERSITY OF Southampton

For more information and to participate please contact Ella on 07511686567 or emh1n16@soton.ac.uk

Appendix R: Participant Information Sheet

Study Title: An exploration of the associations between the social networks, subjective wellbeing, and household composition of older people in the United Kingdom

Researcher: Eleanor (Ella) Moonan-Howard
ERGO number: 52824

You are being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully and ask questions if anything is not clear or you would like more information before you decide to take part in this research. You may like to discuss it with others, but it is up to you to decide whether or not to take part. If you are happy to participate, you will be asked to sign the consent form included in your activity pack and to confirm that you have consented at the start of the interview.

Who am I?
I am Ella, a Gerontology PhD student at the University of Southampton. My research is funded by the Economic and Research Council's South Coast Doctoral Training Partnership. This research project will collect data for my PhD on social networks, wellbeing, and household formation in later life.

What is the research about?
My research to date has explored the role that one's friends and families play in contributing to their wellbeing, and how these relationships change over time. Alongside these topics, this research project will also include some questions about the way that you anticipate your relationships with your friends and family to change in the coming years. I will also ask some questions about your experience during the COVID-19 pandemic. .

Why is this research important?
The ultimate objective of this research is to improve the wellbeing of individuals in the UK. The extent to which people feel happy, satisfied, fulfilled is highly contingent on the individuals who surround them, and the relationships they maintain with these individuals. In later life, there are many events and or factors that may limit the extent to which these support networks help people to flourish. The COVID-19 Pandemic has brought the importance of these ties into particularly sharp focus.

Your contribution in this research will inform a wider body of literature that has the power to shape public discussion on these topics, policy recommendations, as well as the design and implementation of services that support older adults throughout later life. This is the opportunity to have your voice heard, valued and to contribute to wider social change.

Why me?
You have been asked to participate because you are over the age of 60, you live in Barton-on-Sea, Hampshire, and you have lived here for 10 years or more. You will need to have access to a telephone OR a computer/tablet/smart phone with a reliable internet connection to take part. If you think that you may have been incorrectly identified for this study please contact the researcher on emh1n16@soton.ac.uk or at 07511686567.

What will happen to me if I take part?
You can choose to participate in two different ways based on your comfort and access to a computer. You can

　　　　a) **Take part manually** – If you have chosen this option you should have received an
　　　　information pack through your door. This should include a consent form, three activity

sheets, a questionnaire, some recruitment flyers, and this information sheet. The next step will be to arrange a telephone interview. If you have not arranged an interview and/or have not received your information pack please contact me (Ella) on 07511686567 to do so. The interview will take approximately 1 hour, and you should find a quiet and comfortable time/place free from distractions whilst participating. There are three activity sheets in your information pack you will need to complete these during the interview, I will explain how you can do so at the beginning of the interview. After your interview you will need to complete a short self-completion questionnaire, which you should also find in your information pack. I will collect your signed consent form, completed survey and activity sheets from outside your door. You can arrange a convenient time to do so with me after the interview.

When the interview is about to begin I will call you on the number agreed in our first telephone conversation, this can be a landline or mobile device. You will put on speaker phone so that I can record the interviews but I will be alone in a quiet room so you will not be heard by anyone else.

b) **Take part digitally** – if you have chosen this option you should have received an information pack via email. This should include a consent form, three activity sheets, a questionnaire, some recruitment flyers, and this information sheet. The next step will be to arrange a Microsoft Teams video interview. If you have not arranged an interview and/or have not received your information pack please contact me (Ella) on 07511686567 or emh1n16@soton.ac.uk to do so. The interview will take approximately 1 hour, and you should find a quiet and comfortable time/place free from distractions whilst participating. There are three activity sheets in your information pack you will need to complete these during the interview, I will explain how you can do so at the beginning of the interview. After your interview you will need to complete a short self-completion questionnaire, which you should also find in your information pack. I will ask you to email back to me your signed consent form, the completed questionnaire, and the activity sheets.

When you are ready for your interview to begin you will need to be in front of a computer/tablet or smart phone with a reliable internet connection. The interview will be conducted using Microsoft Teams. This is a free video conferencing platform that is quick and easy to download. You can access the meeting by clicking on the unique meeting link below and this will direct you to download the app, and then on to the meeting. When you are connected I will ask you to open up the activity sheet documents sent in the information pack via email and will ask you to share your screen. The meeting will be audio and video recorded. This is so that I can both talk to you and watch you fill out the activity sheets. Please only have the activity sheets and Microsoft teams open on your device as I will be able to see your screen. I will be on hand to answer any questions and to help set up the meeting.

Microsoft Teams Meeting Link: {insert download link}

For both digital and manual participants the interviews will be audio recorded for note taking purposes and transcribed, all interview transcriptions and notes will be sent by either email or postage at least 2 months after the interview has been completed. Audio files will be deleted after transcriptions have been made.

Are there any benefits in my taking part?

As outlined above by participating in this research, you are contributing to a wider body of knowledge about the importance of social connections for older adults, and the role they play in people's happiness, life satisfaction, and general fulfilment. This knowledge will be used to inform future research innovation and policy debates that collectively contribute to the creation of initiatives that make the UK a better and more connected place to live in later life. It will also help us better understand how social networks have changed during the recent COVID-19

pandemic. Your part in this is highly valued, and as a result you will be entered into a draw for a gift voucher worth £50 to be used at local or online retailers. You will also receive copies of your activity sheet and transcriptions of your interview, so that you can keep your responses as a personal memento of your thought and feelings at this time. If you are less familiar with Microsoft teams and online video conferencing this research can provide a good opportunity to learn to use these platforms.

Are there any risks involved?
Due to the COVID-19 Pandemic, this research will be conducted minimising all face-to-face interaction. Minimal risks of infection through the passing of envelopes through letter boxes may be incurred, however, the interviewer will be wearing gloves during delivery, and where it is possible activity sheets will be left in a safe place to be collected after a safe period of time.

The project will be exploring the role of your friends and family in your wellbeing. There is the potential for sensitive subjects surrounding loss, bereavement, conflict, and loneliness to emerge. If at any point during the interview you feel uncomfortable or distressed you are welcome to pause, move on to the next question or withdraw your participation in the study altogether with no pressure to continue. If you decide to leave the study, any information contributed by you up until this point will be deleted and will not be used in the research.

What data will be collected?
The following three types of data will be collected and analysed:

1) Visual data, produced through participatory drawing-based interview activities.
2) Textual/Audio data, produced through the creation of transcriptions from conversations throughout the interview.
3) Textual/numeric data, produced through the completion of a self-completion questionnaire.

There are several questions included in the self-completion questionnaire fall into the category of 'personal data' under the General Data Protection Regulation (GDPR) classifications. These include questions about your gender identity, subjective health status and the presence of an illness or disability, your housing status employment and level of education. You may leave blank any questions you do not want to answer.

All data will be stored on a password protected and encrypted computer, and all paper copies will be stored in a locked filing cabinet before being digitised and then destroyed.

Will my participation be confidential?
Your participation and the information we collect about you during the course of the research will be kept strictly confidential.

Only members of the research team and responsible members of the University of Southampton may be given access to data about you for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to your data. All of these individuals have a duty to keep your information, as a research participant, strictly confidential.

Do I have to take part?
No, it is entirely up to you to decide whether or not to take part. If you decide you want to take part, you will need to sign a consent form to show that you have agreed to take part.

What happens if I change my mind?
You have the right to change your mind and withdraw at any time without giving a reason by contacting myself, through email at: emh1n16@soton.ac.uk or on the phone at: 07511686567. Before the 01.03.2020, your data will be destroyed, after this date however your contributions

(with pseudonyms) may feature on external publications and therefore will not be withdrawn
or destroyed.

What will happen to the results of the research?

The results of the research will be used to inform the third chapter of my PhD thesis,
publications, and poster/oral conference submissions. Your personal details will remain strictly
confidential. Research findings made available in any reports or publications will not include
information that can directly identify you and will be pseudonymised.

Where can I get more information?

If you have any further questions do not hesitate to contact myself on 07511686567 or at
emh1n16@soton.ac.uk

What happens if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who
will do their best to answer your questions.

If you remain unhappy or have a complaint about any aspect of this study, please contact the
University of Southampton Research Integrity and Governance Manager (023 8059 5058,
rgoinfo@soton.ac.uk).

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research
integrity. As a publicly-funded organisation, the University has to ensure that it is in the public
interest when we use personally-identifiable information about people who have agreed to
take part in research. This means that when you agree to take part in a research study, we will
use information about you in the ways needed, and for the purposes specified, to conduct and
complete the research project. Under data protection law, 'Personal data' means any
information that relates to and is capable of identifying a living individual. The University's data
protection policy governing the use of personal data by the University can be found on its
website (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-
foi.page).

This Participant Information Sheet tells you what data will be collected for this project and
whether this includes any personal data. Please ask the research team if you have any
questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University
of Southampton collects and uses your personal data when you take part in one of our
research projects and can be found at
http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Int
egrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf

Any personal data we collect in this study will be used only for the purposes of carrying out our
research and will be handled according to the University's policies in line with data protection
law. If any personal data is used from which you can be identified directly, it will not be
disclosed to anyone else without your consent unless the University of Southampton is
required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use
your Personal data. The lawful basis for processing personal information in this research study
is for the performance of a task carried out in the public interest. Personal data collected for
research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the 'Data Controller'
for this study, which means that we are responsible for looking after your information and

using it properly. The University of Southampton will keep identifiable information about you for 10 years after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page) where you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer (data.protection@soton.ac.uk).

Data will be pseudonymised through the use of key-coding and the removal of personal identifiers in all interview transcriptions and self-completion questionnaires. The two supervisors working on the project, Professor Athina Vlachantoni and Professor Maria Evandrou from the Department of Gerontology, University of Southampton may have access to the pseudonymised data but not to the key codes or names and contact information of the participants.

Thank you.

Appendix S: Consent Form

CONSENT FORM

Study title: An exploration of the associations between the social networks,
                               subjective wellbeing, and household composition of older adults in the
                               United Kingdom.

Researcher name: Eleanor (Ella) Moonan-Howard

ERGO number: 52824

Please initial the box(es) if you agree with the statement(s):

I have read and understood the information sheet (05/10/2020 version 4) and have had the opportunity to ask questions about the study.	
I agree to take part in this research project and agree for my data to be used for the purpose of this study.	
I understand my participation is voluntary and I may withdraw at any time. I understand that if I withdraw prior to 01.03.2021 all my data and inclusion in any work related to the study will be removed and deleted. I understand that if I withdraw after 01.03.2021 although all data held by the researchers will be deleted the anonymous contributions from my involvement may remain featured in external published works.	
I understand if I do not withdraw from the study my data will be safely held for 10 years in accordance with the University of Southampton Research Data Management Policy before being deleted.	
I understand that taking part in the study involves audio/video recording which will be transcribed. The audio and visual data will be destroyed after these transcriptions have been created.	
I understand that I may be quoted directly in reports of the research but that I will not be directly identified (e.g., that my name will not be used, and other identifiable information will not be included).	

Name of participant (print name):
Signature of participant:
Date:

Name of researcher (print name): ELEANOR MOONAN-HOWARD
Signature of researcher:
Date:

Appendix T: Cover letters, Interview Activity Sheets, Demographic Survey and Interview Guide.

10.1.4. Telephone Interview, interview pack cover letter (anonymised)

Ella Moonan-Howard
Post Graduate Researcher
xxxx
Southampton
SO14

12th November 2020

Dear xxxxx
Barton on Sea

Dear xxxx,

Thank you for expressing your interest in participating in this research project. Please read through all the documents in this information pack before deciding to participate. You do not need to complete any of these prior to the interview. You should have received this cover letter, a consent form, an activity sheet, a question prompt sheet, some recruitment flyers and a participation information sheet.

Interview date:

Interview time:

Interview method:

Contact method:

We have recorded that you would be interested in taking part by telephone and have schedule an interview for the above date and time. If you would either not like to take part or would prefer to take part online or at a different date or time, then please do not hesitate to contact me.

When the interview is about to begin, I will call you on the number above. Please find a quiet, comfortable and distraction free place for our conversation. There are some interview prompts in your participation information pack, please can you make sure you have these near you and have a pen on hands when the interview begins.

I will put you on speaker phone so that I can record the interviews but I will be alone in a quiet room so you will not be heard by anyone else. The interviews will be audio recorded for note taking purposes only and transcribed. Audio files will be deleted after transcriptions have been made.

You will be asked to post the consent form back to the researcher after the interview in the pre-paid envelope provided.

I look forward to speaking to you further. If you have any questions you may contact me on xxxxx or at xxxxxx or you may contact my Research Supervisor Professor Maria Evandrou on xxxxx or at xxxxx.

Thank you for your kindness and generosity,

Ella

10.1.5. Computer Interview, interview pack cover letter (anonymised)

Ella Moonan-Howard
Post Graduate Researcher
xxxx
Southampton
SO14

12ᵗʰ November 2020

Dear xxxx
Barton on Sea

Dear xxxx,

Thank you for expressing your interest in participating in this research project. Please read through all of the documents in this information pack before deciding to participate. You should have received this cover letter, a consent form, an activity sheet, a question prompt sheet, some recruitment flyers and a participation information sheet..

Interview date:

Interview time:

Interview method:

Contact method:

We have recorded that you would be interested in taking part online and have scheduled an interview for the above date and time. If you would either not like to take part or would prefer to take part on the telephone or at a different date or time, then please do not hesitate to contact me.

When you are ready for your interview to begin, please find a quiet, comfortable and distraction free place for our conversation. You will need to be in front of a computer/tablet or smart phone with a reliable internet connection. There are some interview prompts in your participation information pack, please can you make sure you have these near you and have a pen on hands when the interview begins.

The interview will be conducted using Microsoft Teams. This is a free video conferencing platform that is quick and easy to download. You can access the meeting by inputting the meeting URL into a web browser or by clicking on the meeting link that will have been separately emailed to you. If you have any questions or difficulty using teams then please do not hesitate to contact me in advance of the scheduled interview time.

You may choose to display your video or not. The meeting will be audio recorded
for note taking purposes only and transcribed. Audio files will be deleted after
transcriptions have been made. You will be asked to post the consent form back to
the researcher after the interview in the pre-paid envelope provided

I look forward to speaking to you further. If you have any questions you may
contact me on xxxx or at xxxx or you may contact my Research Supervisor Professor
Maria Evandrou on xxxx or at xxxx.

Thank you for your kindness and generosity,

Ella

10.1.6. Interview Activity Sheet

Interview Activity (anonymised)

If you have not arranged to participate in this research study, you believe this information to be incorrect, or you have any questions about the interview or connecting online please contact Ella on xxxx or email at xxxx

Please do not complete this form until your interview begins.

Task
Imagine that you are in the centre of the following chart. Please mark the people in your life on the chart. Place those who you think contribute most to your wellbeing in the centre and those who contribute to your wellbeing least far away from you. These may be positive or negative influences. It may be useful to place initials by each point, so you remember the identity of the individual. Please do not provide full names to ensure these individuals anonymity. Your interviewer will ask you a series of questions about how and why you have chosen to place these individuals in this place on the chart.

Thank you.

Social Network Prompt

Me
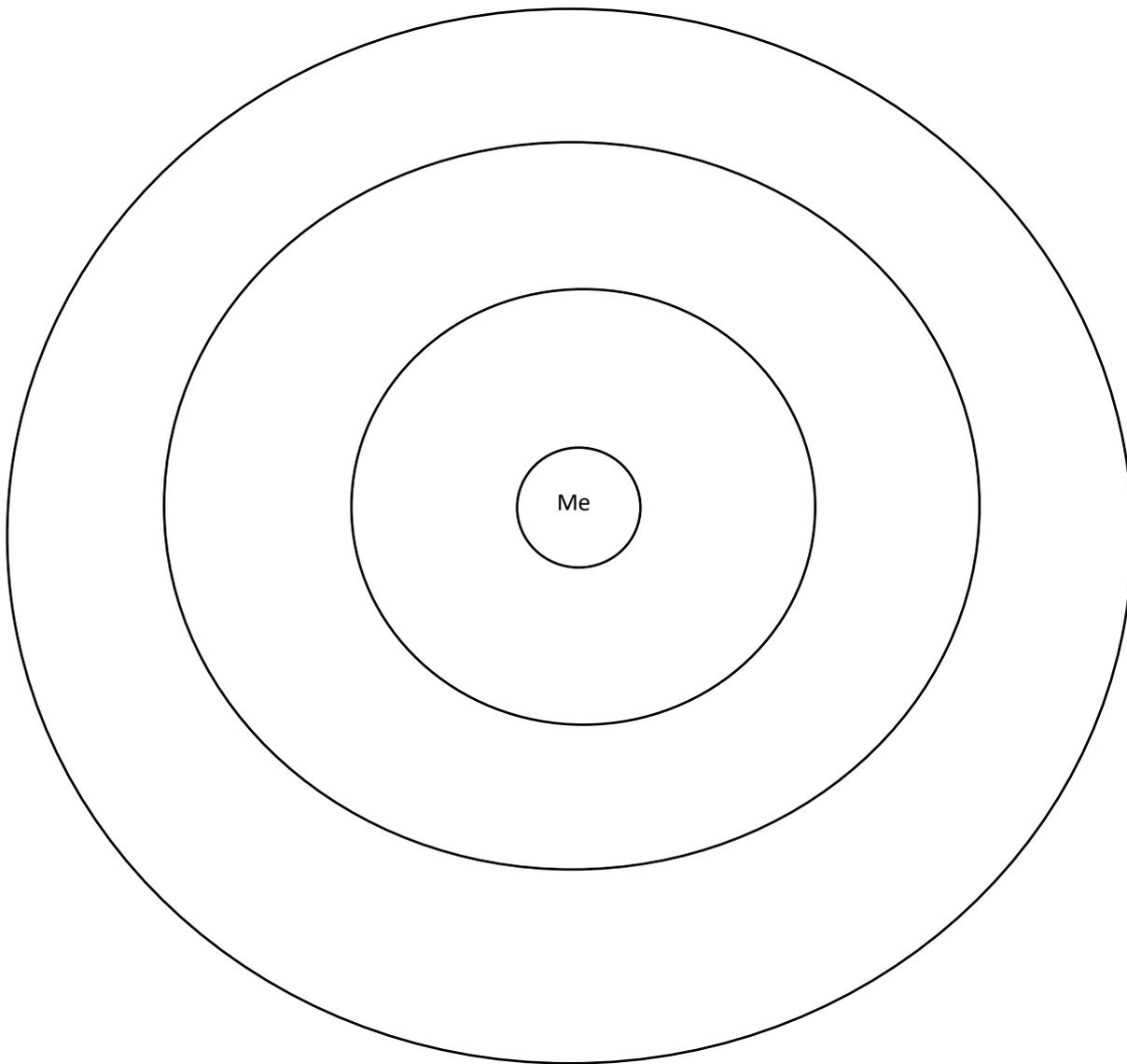
10.1.8. Demographic Survey and Adaptions

The questions in the below demographic survey have been adapted from those used in Understanding Society. A full description of the adaptations made is listed in section 3.5.4.3.

<u>Demographic Survey</u>

1. How old are you?
   - o 60-65
   - o 66-70
   - o 71-75
   - o 76-80
   - o 81-85
   - o >=86

2. What is your sex?
   - o Male
   - o Female

3. What is your legal marital status?
   - o Single, Never married/Civil Partner
   - o Married
   - o Civil Partner (legal)
   - o Separated, legally married
   - o Divorced
   - o Widowed
   - o Separated from civil partner
   - o A former civil partner
   - o Surviving civil partner

4. Which of the following housing tenures best describes your current situation?
   - o Owned outright
   - o Owned with a mortgage
   - o Local Authority rent
   - o Rent from Employer
   - o Private rental, Unfurnished
   - o Private rental, furnished
   - o Other

5. Of these, which one best describes your current employment situation?
   - o Self employed
   - o Paid employment (ft/pt)
   - o Unemployment

- o Retired
- o On Maternity Leave
- o Family Care or Home
- o Full-time Student
- o Long term sick or disabled
- o Govt training scheme
- o Unpaid, family business
- o On apprenticeship
- o Doing something else
- o Don't know

6. Can you tell me the highest educational or school qualification you have obtained?
   - o Higher Degree (e.g. MSc, PhD)
   - o First degree or equivalent, qualifications including foundation degrees, graduate membership of professional institute, PGCE
   - o Diploma in higher education
   - o Teaching qualification not PGCE
   - o Nursing/other medical qualification
   - o Other higher degree
   - o A Level
   - o Welsh Baccalaureate
   - o International Baccalaureate
   - o AS level
   - o Highers (Scotland)
   - o Cert 6th year studies
   - o GCSE/ O level
   - o CSE
   - o Standard/o/lower
   - o Other school certificate
   - o None of the above

7. Were you born in the UK, that is in England Scotland Wales or Northern Ireland?
   - o Yes, England
   - o Yes, Wales
   - o Yes, Scotland
   - o Yes, Northern Ireland
   - o Not born in the UK
   - o Don't Know

8. Here are some questions about how you feel about your life. Please choose the number which you feel best describes how dissatisfied or satisfied you are with the following aspects of your current situation?

   Your health
   - o Completely dissatisfied

- o Mostly dissatisfied
- o Somewhat dissatisfied
- o Neither satisfied nor dissatisfied
- o Mostly satisfied
- o Completely satisfied

Your life overall
- o Completely dissatisfied
- o Mostly dissatisfied
- o Somewhat dissatisfied
- o Neither satisfied nor dissatisfied
- o Mostly satisfied
- o Completely satisfied

9. Do you have any long-standing physical or mental impairment, illness or disability? By 'long-standing' I mean anything that has troubled you over a period of at least 12 months or that is likely to trouble you over a period of at least 12 months?

- o Yes
- o No
- o Don't Know

10.1.9. Interview Guide

<u>Pre-interview check list</u>

- Introduce myself
- Check they have read and understood the Participant Information Sheet and signed the consent form.
- Reiterate that they can stop and/or pause the interview when they like, and can leave the study if they like
- Confirm consent to audio/video record interviews
- Check audio/video recorder is on and working
- Check paper interview pack has been received by participant and has this at hand.
- Check participant meets interview criteria – lives in LSOA catchment, hasn't moved in the last 8 years, doesn't live in a residential care home, is over the age of 60.

My research is about all the people in your life who influence your wellbeing. There will be four parts to the conversation. Firstly, I will ask you to tell me about the relationships you have right now, this will involve a quick exercise.

Secondly, I will ask you to look back before the pandemic to think about if the relationships were different then, how and why.

I will then look forward in time to better understand how you anticipate your relationships to be in the future.

After the conversation, you will be asked some quick questions about your demographic information.

<u>Interview Questions</u>

I would like you to think about the people in your life who are important to you and those who contribute to your wellbeing. There need not be many or even any of these but if there is anyone could please place them on the diagram. Those who contribute most to your wellbeing in the centre and those who contribute least to your wellbeing further out.

- Who have you placed on the diagram?
    - Are these in your household?
    - Are they family/friends/neighbours?
    - Are there any individuals from organisations/churches/community groups?

- Why have you placed them there?

- o What emotions would you attribute to these relationships?

- In which ways do they contribute to your wellbeing?
    - o Emotional or practical support?
    - o How do you interact – methods of communication
    - o How regularly do you interact?
    - o Where do you meet up? – socialisation places?

- Has living in Barton on sea had an impact on your social networks – transport, parks, local amenities?

I would like you to think back pre-pandemic, this time last year and think how you may fill out the diagram differently or similarly?

- Any changes in the
    - o Individuals in the diagram
    - o Amount of contact,
    - o Type of contact
    - o Closeness of relationships

- Did you engage in any strategies to actively change your relationships?

- Have you engaged in any strategies to actively maintain your relationships?

- Have you had to adapt the methods used to maintain contact with anyone – transport, place, support given or received?

- How do you feel about these changes or lack of changes? –

- Can you think of any key moments or events in the past in which your social network did change considerably?
    - o When was this and why?

- Have you experienced any changes to the individuals in your household and did this impact your social networks?

- Were there any memorable moments or events in which other aspects of your life changed, but your friendships remained consistent?

- Did you engage in any strategies to actively change your relationships?

- Have you engaged in any strategies to actively maintain your relationships?

- Since living in Barton-on-sea have you experienced any changes to any of the aspects of the village discussed previously (transport, village amenities,

public spaces etc.), and have these played a role in your described social network change?

I would like you to think to the future. You can define how long in the future this is a snapshot, however, please explain the time frame you have chosen to use to the interviewer. (10 years)

- Any changes in the
    - Individuals in the diagram
    - Amount of contact,
    - Type of contact
    - Closeness of relationships

- Would you have drawn anything different if you were drawing the social network you would like or are hoping to have as opposed to the one that you would realistically expect to have?

- Do you anticipate there being any events, or moments that you anticipate may lead to changes in your networks?

- Can you describe any feelings you have attached to this potential change or lack of potential change?

- Do you plan on engaging in any strategies to maintain and/or change your current network?

- Are you anticipating any changes to the people living in your household, and do you think these may impact your social networks?

Appendix U: Selecting a Location for Study Three

Several factors were considered when selecting a study location. Firstly, due to the risks associated with using public transportation during COVID-19 the initial study location search was limited to the local authority districts in Hampshire and the Isle of Wight. Beyond these pragmatic reasons a study location that was deemed to be most conducive to the maintenance of large and active social networks was selected. This follows the rationale that if the environmental and social barriers are minimised, the role of human agency in managing and selecting social contacts may be allowed to take greater prominence. This meant choosing a study location in which there were lots of individuals over the age of 60, were there were good transportation links, there were relatively low levels of deprivation and there were local socialisation spaces and amenities. Beyond these criteria, a neighbourhood with a relatively homogenous population and clear geographical boundaries was deemed preferable for methodological consistency and clarity.

Of the Local Authority Districts that were within reasonable reach, The New Forest, and the Isle of Wight both had the highest total populations over the age of 60 and were therefore selected for further investigation at the ward level. Although several wards were initially explored on the Isle of Wight that had both high numbers of older adults and clearly demarcated neighbourhood boundaries, these were on average more deprived that the neighbourhoods in the New Forest and had poorer amenities and transportation links. The ward of Barton to the Southwest of the New Forest was selected as the case study location due to its high proportion of older adult residents, its relative affluence and high levels of connectivity and amenity.

Table 10.34: Population over the Age of 60 in absolute numbers by local authority district 2019.

Local Authority District	Population over the age of 60 in absolute numbers (2019)
New Forest	65267
Isle of Wight	50620
Southampton	39335
Portsmouth	40358
Basingstoke	40629
East Hampshire	36692
Eastleigh	34051
Fareham	35027
Gosport	22549
Hart	24568
Havant	38037
Rushmore	18744
Test Valley	35176
Winchester	34068

Source: Author's analysis based on data from ONS, detailed population estimate series UK

Appendix V: Barton-on-Sea an Overview

Barton-on-sea lies in the Local Authority District (LAD) of The New Forest. According to the Consumer Data Research Centre (CDRC) Aging in place Classification Barton on Sea is classified as 'rural ageing' ("Classifying the Older Population | CDRC Data," n.d.). To its southern border is a publicly accessible beach, with clifftop promenade. To the north is the town of New Milton. Most of Barton-on-sea is characterised by residential property, it has a golf course, several churches and convenience stores.

10.1.10.   Ageing and Population Change

The South East of England saw its population increase by 7.5% between the 2011 and 2021 censuses ("How life has changed in New Forest," n.d.). In contrast to this the New Forest was one of only two LADs to see its population decline during the period (*ibid*). The population of the New Forest was 175,800 at the 2021 census. This is particularly notably as the New Forest is also the tenth least densely populated LAD in the region with area 2 people living on each football pitch-sized area of land (233.7 usual residents per square kilometre).

Thirty-seven per cent of the population of the New Forest was aged over 60 in 2021 (*ibid*). The average (median age) in the area increased by 4 years from 47 to 51 between 2011 and 2021, both of which are higher than the median age for England which, in 2021, sat at just 40 years (*ibid*). The share of residents aged between 65 and 74 years in the New Forest increased by 2.5 percentage points during this period (*ibid*). The ward of Barton and Becton within the New Forest has, proportionately, an even older resident population (NOMIS, 2021). Sixty per cent of the usual resident population of Barton and Becton ward are aged over 60 (*ibid*).

10.1.11.   Resident Demographics: Ethnicity, Nationality and Religion

Fifty-four per cent of the resident population of Barton and Becton ward is female, a slightly higher proportion than that seen for England and Wales at 51% (*ibid*).

Barton and Becton ward is also less ethnically diverse than England and Wales as a whole. 92.% of Barton and Becton were born in the UK and a further 6% have been resident in the UK for more than 10 years. 95% identify as having a British national identity and 97% report being ethnically white (*ibid*). 98% report that English is their main language (*ibid*). Moreover, larger proportions of the residents of Barton reported being Christian (61%) than the average for England and Wales (46%), and fewer reported having no religion (31%) than the country level average (37%) (*ibid*).

10.1.12.   Resident Demographics: Health and Wellbeing

In line with the age profile of the area, greater proportions of the residents in Barton and Becton ward reported that they were living with a disability (23%) than the average for England and Wales (18%), and smaller proportions report living in good (39%) or very good health (38%) than at the average level for England and Wales (34% and 48% respectively) (*ibid*). Despite the older than average resident population the Health Index Score for the New Forest in 2021 was above average for England (110.6) (Office for National Statistics (ONS), 2023b).

Across four metrics, adults aged over 16 (2022-23) in the New Forest LAD reported lower average anxiety levels and higher average self-reported wellbeing scores than the averages across all local authority districts (Office for National Statistics (ONS), 2024a). The average rating of those that 'felt anxious yesterday' (on a scale of 0 to 10, where 0 is 'not at all anxious' and 10 is 'completely anxious') was 3.0 for the New Forest, compared to 3.3 across all LADs (*ibid*). The average scores of those that feel life is worthwhile in the New Forest is 7.9, compared to a LAD median of 7.8. Here, 0 is 'not at all worthwhile' and 10 is 'completely worthwhile'. For 'those that

felt happy yesterday', the New Forest reported an average score of 7.5 compared to a 7.4 LAD average (*ibid*). In this metric a score of 0 indicates someone being 'not at all happy' and a score of 10 indicates someone is 'completely happy'. Lastly for life satisfaction the New Forest recorded an average score of 7.8 compared to the LAD average score of 7.5 (*ibid*).

10.1.13.   Resident Demographics: Employment and Socio-economic Status

Fifty-three per cent (n=2628) of the usual residents of Barton and Becton ward, aged over 16, are retired. Only 37% of the same group are economically active (NOMIS, 2021). This is a much smaller proportion than the 57% of residents of England and wales aged over 16 who are economically active (*ibid*). Despite this, higher than average proportions for England and Wales report being in the first occupation class (managers, directors and senior officials) in Barton and Becton ward (*ibid*).

Sixty-eight per cent of the usual residents of Barton and Becton ward own their properties out right, this is more than double the average for England and Wales (33%) (*ibid*). 89% of household are deprived in one or less dimensions, higher than the average for England and Wales (82%) (*ibid*). The relative affluence of the area is reflected in property prices. The average property in the New Forest was £387,000 in March 2024, this is higher than the average for the South East at the same time point (£373,000) (Office for National Statistics (ONS), 2024b). Both of which are higher than the British average for the same time point, this stood at £286,000 (*ibid*).

10.1.14.   Residential Mobility

The CDRC Residential mobility index is defined as the proportion of households that have changed in a given area between the end of 2020 and the end of each year going back to 1997. The New Forest local authority district holds a residential

mobility score of 62% from the period from 1997 to 2020 ("CDRC Residential
Mobility Index | CDRC Data," n.d.). The lowest score is 45% and the highest 80%
meaning that the new forest has seen a relatively average rate of population churn
across this period (*ibid*).

10.1.15.   Neighbourhood Deprivation, Crime and Social Cohesion

Of the 114 neighbourhoods in the New Forest 39 were in the least income-deprived
20% in England, the neighbourhoods in and around Barton-on-sea all fall into this
category ("Exploring local income deprivation," n.d.). Barton-on-Sea is classified as
having 'no significant change' in the CDRC deprivation rank change scale, marking it
out as being relatively stable in this lack of deprivation ("CDRC Residential Mobility
Index | CDRC Data," n.d.). Police recorded crime rates for Hampshire are lower than
national average, standing at 82 per 1'000 for 2023, compared to 91 for England
and Wales (Office for National Statistics (ONS), 2024c).

10.1.16.   Transport and Connectivity

Only four per cent of the residents of Hampshire and the Isle of White have never
had access to the internet (2020), lower than the 6% national average (Office for
National Statistics (ONS), 2024d). However, average download speeds are below
the national average, with the constituency of New Forest West holding an average
download speed of 68.8 Mbps compared to the national average of 151.3 (Baker,
2024). 37.5% of premises in the New Forest LAD have capable broadband of 125
megabytes of greater as of September 2023. This is lower than the LAD average of
76.8% (Office for National Statistics (ONS), 2024a).

New Milton has a train station with direct links into London and across the South
Coast. Bus services operate across Barton and the paths are pedestrian friendly
with wide pavements, quiet roads, and walking routes. The beach is publicly
accessible. The Department for Transport reports that The New Forest holds

average travel times to a nearest employment centre (area with 500-4999 jobs

available) that are slightly higher than the LAD average (2019) (Office for National

Statistics (ONS), 2024a). It takes 13.3 minutes by public transport and 7.8 minutes

by car, compared to 11.5 (public transport) and 7.6 (car) across all LAD on average

(*ibid*).

10.1.17.   Study Location Boundaries

The administrative boundaries for Barton ward were adapted for this study to make

use of the natural geographical neighbourhood boundaries. The boundary to the

east was extended into Becton ward to continue the suburban housing up until the

rural neighbourhood edge, and the holiday home park was removed from the

boundary to the east, to capture permanent residents. The main road to the north

remained the study location boundary cut off.
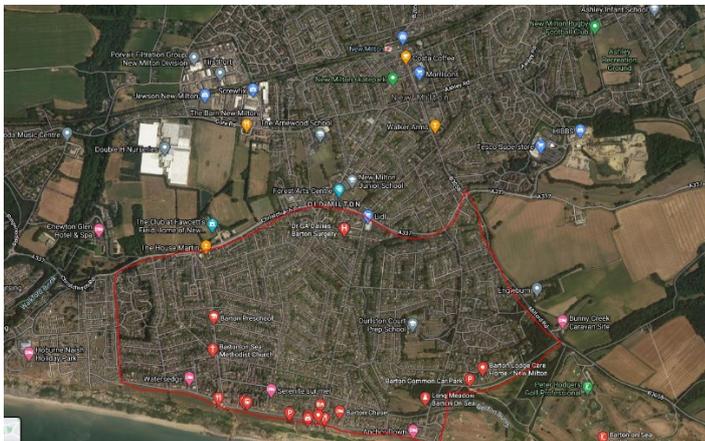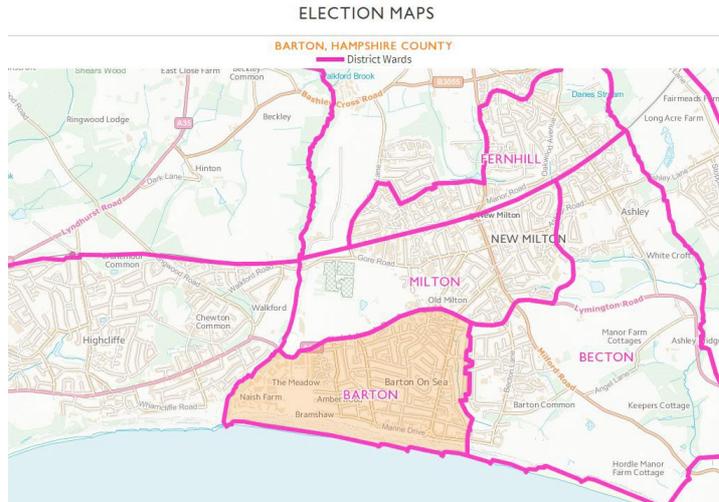
Figure 10.3: Case study location boundary

Figure 10.4: Electoral Boundary for Barton Ward

ELECTION MAPS

Appendix W: Sample Overview

Table 10.35: Profile of Sample in Study Three

Participant ID	Pseudonym	Gender	Age	Tenure	Employment Status	Nationality	Satisfaction with Health	Presence of a long-term Illness or disability	Life Satisfaction	Household Composition	Marital Status
P2	Michael	M	70-74	Own Outright	Retired	UK Born	Somewhat Satisfied	No	Neither Satisfied nor Dissatisfied	Lives Alone	Single/Divorced
P4	Richard	M	70-74	Own Outright	Retired	UK Born	Mostly Satisfied	Yes	Mostly Satisfied	Lives Alone	Widowed
P6	George	M	90-94	Own Outright	Retired	UK Born	Somewhat Satisfied	No	Somewhat Satisfied	Lives with Partner	Married
P7	Gary	M	65-69	Own Outright	Retired	UK Born	Mostly Satisfied	Yes	Somewhat Satisfied	Lives with Partner	Married
P8	Anthony	M	65-69	Own Outright	Retired	UK Born	Mostly Dissatisfied	Yes	Mostly Satisfied	Lives with Partner	Married
P11	Shirley	F	75-79	Own Outright	Retired	UK Born	Neither Satisfied nor Dissatisfied	Yes	Somewhat Dissatisfied	Lives with Partner	Married
P12	Dorothy	F	65-69	Own Outright	Long-term sick	UK Born	Mostly Dissatisfied	Yes	Somewhat Dissatisfied	Lives Alone	Single/Divorced
P13	Mary	F	70-74	Own Outright	Retired	UK Born	Completely Satisfied	No	Completely Satisfied	Lives Alone	Single/Divorced
P14	Ruth	F	60-64	Own Outright	Paid Employment	UK Born	Somewhat Dissatisfied	Yes	Somewhat Dissatisfied	Lives with Partner	Married
P15	Paul	M	65-69	Own Outright	Retired	UK Born	Completely Satisfied	No	Completely Satisfied	Lives with Partner	Married
P16	Isabelle	F	60-64	Own Outright	Retired	UK Born	Mostly Satisfied	No	Mostly Satisfied	Lives with Partner	Married
P17	Thomas	M	75-79	Own Outright	Retired	UK Born	Mostly Satisfied	No	Mostly Satisfied	Lives with Partner	Married
P18	Helen	F	60-64	Own Outright	Retired	UK Born	Mostly Dissatisfied	Yes	Somewhat Dissatisfied	Lives with Partner	Married
P20	Anne	F	80-84	Own Outright	Retired	UK Born	Somewhat Satisfied	Yes	Somewhat Satisfied	Lives with Partner	Married

P21	Victor	M	70-74	Own Outright	Retired	UK Born	Mostly Satisfied	No	Mostly Satisfied	Lives with Partner	Married
P23	Alan	M	75-79	Own Outright	Retired	UK Born	Mostly Satisfied	No	Somewhat Satisfied	Lives with Partner	Married
P24	Rose	F	70-74	Own Outright	Retired	UK Born	Mostly Satisfied	No	Mostly Satisfied	Lives with Partner	Married
P25	Andrew	M	80-84	Own Outright	Retired	UK Born	Mostly Satisfied	No	Mostly Satisfied	Lives with Partner	Married
P26	Joyce	F	70-74	Own Outright	Retired	UK Born	Neither Satisfied nor Dissatisfied	Yes	Mostly Satisfied	Lives Alone	Widowed
P27	Catherine	F	70-74	Own outright	Retired	Not UK born	Mostly Satisfied	No	Mostly Satisfied	Lives with Partner	Married
P28 (excluded from analysis)	Earl	M	75-79	Own outright	Retired	Not UK born	Completely Satisfied	Yes	Completely Satisfied	Lives with other	Widowed

Source: Authors Creation

Appendix X: Table of Themes

Friendship

Friendship	Themes	Sub-themes	Quotes
Friendship Structures	Interaction Frequency		"One friend, I interact with more we're, we're in very frequent contact virtually every day". "Then the next bit out I would say is our friends. Now we have two sets of friends that we see quite regularly. I knew both of them from where I used to work. And, and my wife came to know the wives as well. So we meet up with them quite regularly, usually". "We have other friends. So the couple was in different parts of the country that we FaceTime with probably once a fortnight, something like that. And I guess would be three, four couples who you've put into that sort of into that group".
	Fictive Kin	• Discourse of friendship as fictive kin is linked to a lack of biological kin	"I haven't had sort of sisters or brothers and I have no living family. So now it's, it's very much friends. I am, I do feel very blessed with my friends" "Well, they're (friends) the people I have most contact with because I'm on my own. We agreed a while back that I would form a bubble with them. But even before that, after I lost my wife, I have been treated very much as part of their family. So, they're, they're a family that I have close contact with and indeed have a significant impact on, on how I feel". "My neighbours have been a great support. After I lost my wife, they've treated me very much like family. I don't see them much but I have contact with their children and even their grandchild. They have a significant impact on how I feel."
	Long-term friendship	• Shared life experiences • Greater emotional attachment to longer term friendships • Long-term friendships linked to a sentiment that these friendships are unlikely to change and/or that this change is undesired. • Friendships often formed during early life course experiences	"So, you know, my, my friends, we've, we've maybe just one exception were all people that I kind of knew 20 or 30 years ago, rather than necessarily other than those people who fit into that golf buddy type bracket, none of them are people that I've met within the last 20 years". "Most of my friends, as I've said, they're friends that I've had for a long time. So yeah. Some of those friendships have already stood the test of time. So that's not likely to change". "I've got two very close friends that we've been friends since we were 16. Really lifelong friends. … They are the main friends in my life, the long-standing friends". "I think people, especially when they get older, perhaps don't like to get too involved with people they never knew in their younger days. … We've been here 12 years, but a lot of our neighbours have been here not longer than that and I think they just form their own little parties. … I think because there's no emotional attachment to somebody you haven't known for a long time and shared experiences with. I just think, who well they're quite nice people, but I, I haven't got time

		such as when children are young or through work. • Could act as a barrier to friendship formation.	to get involved or I don't particularly want to. … I just think people can't be bothered they'd rather continue with their friends and family". "Linda, I actually knew when I was about 14. I wasn't friends with her. She's four years older than me. And when you're 14, that's a big gap, but we became friends through our children because our children are the same ages. So we sort of reconnected through the children. Betty was work friend from when I worked, I worked with her back in the 1980s. So she's probably my oldest friend. And when did again, I met her through the children and my children are now 27. Yeah. She's 28 now she's 28 and Fred's nearly 30 now. So It's been a long time". "I have a friend who I've known for six 64 years. And we've got, we've got a lot of long-time friends that we've known for 30, 40 years." "I've got two friends who I've known for one, I've known for 55 years. One I've known for 46, 47 years. And I'm, I'm very close to both of them. And I talk to them, I email them and between them they, they know most of what's going on in my life".
	Geographical distance	• COVID disrupting visits • Technology enabled communication	"Most of my friends live quite a way away, so they're not people we would bump into every day of the week. … None of them were exactly just down the road. So, we're kind of used to maintaining a relationship, which is, based on, you know, remote communications. So, it's just, that's now become the norm rather than the not norm". "We have friends that we keep in touch with, obviously, because, because of this situation, they can't come and stay. We would normally have friends that live in Devon would come and stay with us. And then we can stay with them and friends that live in West Sussex and we've known them all our lives more or less. And we would kind of stay with them and they come and stay with us. But you know, this is altered. This is altered our lives. What we do, we keep in touch by phone regularly". "So we've got some really good friends in Spain and they're quite close to us, that we speak to, that's all we can do at the moment. The female in that, in the couple, she's not been very well. So we really wanted to go out and see her in September when she had the breast cancer. And we wanted to see her and do our best to cheer her up. That wasn't possible. We were them due to go out in November. That wasn't possible. And we're now looking at possibly March before we go" "The other friend who's a lot further away, its not been so easy because she's had a very sick husband to look after, and various problems like that. So I haven't actually seen her for two, three years, couple of years now, but we are in frequent contact on the phone. I'm just not able to visit her much at the moment.
Friendship and Wellbeing	Emotional disclosure	• Conflict resolution • Acceptance of true/full self	"It's being able to be totally yourself or voice your opinions. I probably wouldn't agree with them, but you're not going to fall out over it. Good friends. You can say what you like in front of them". "My two friends, that were from work. They would probably be on that outside line because I definitely wouldn't disclose much intimate stuff with them, but I do class them as friends and, we

		• Gender specific, women valuing female conversations and men valuing male conversations. • Using friendships to work through disagreements with other social network members, such as partners or family members. • Talking to friends about health issues or concerns • Shared decision making • Tends to be found with one or two very close long term friendships	try and meet up about three times a year or more. I describe them as not that close because I wouldn't say discuss anything that was going on maybe in my marriage or I might say, Oh yeah, [Husband's] annoying me, but I wouldn't go any further if there was anything, there isn't, but I wouldn't probably tell them. Yes. I would tell probably my most confidante. Yeah". "You confide more to your friends than you do your family, you feel more relaxed and able to do that. If something's bothering you, maybe you would talk about it to your friends rather than worry your family. No, I think you do confide in your close friends, yeah". "I'll get on very well with my wife, but it's nice to have other people to talk to. And especially on a man-to-man situation. I hope you understand that. I can see that". "I would probably say I would put at least two of my friends in there (inner circle) because I do find it important to speak to them. And also I feel particularly well maybe with one of them more than the other two, I can usually speak about those things. Whereas the other two, I might hold back a little bit knowing their temperaments and that sort of thing. If you can understand that". "I don't communicate deeply with my sons. I really don't. I mean, they're very fond of me. I'm sure. And I love them because they're my sons, but we don't, we don't communicate deeply. That's all I can say really on that, obviously that there is that. Who would you say that you, you do communicate deeply with? So, well, my, my, my, my friends that I've mentioned that are distance, but I talked to them on the phone or emailed them frequently". "I guess the, the couple that are closest, my, my best golfing friend, I have a special relationship with her because we, we play golf twice a week. So we are, it's a very much a girly, girly session. My husband plays golf with her husband at a different club, albeit, so we're not all together. So yeah, she, she, she's the person that I confide in and I know I can ring her up or I can say, shall we go and meet? I've got something to discuss, you know, I've got a problem, you know, just a general meet up on a girly chat, which you can't do with men around. We don't want them complicating things. So, yeah, I've got an another good friend I used to work with who lives in Tamworth. So she lives, you know, quite a way away, but, and she's very much a person that I bring up on the telephone and I know she would drop everything and come see me. And vice-versa if she had a problem".
	Emotional Support	• Shared decision making • Tends to be found with one or two very close long term friendships	"They (friends) went through a particularly bad 18 months just where they live and the next door neighbours. So, they decided to upstate and move, which has been quite traumatic. And I know we've helped them by being in touch on FaceTime and talking through some of their problems

		• Able to ask for support at any time. • Gender specific, women valuing female conversations and men valuing male conversations. • Using friendships to work through disagreements with other social network members, such as partners or family members.	and trying to bolster them up and, you know, make them think that's the right move for them, even though it's been long and drawn out". "Well, I suppose when it comes to bearing in mind that they're all in their seventies, we've all got health issues. Our Husbands have all got health issues. So sadly we spent quite a lot of time talking about health, which wouldn't have happened 30 years ago, but now it does. And also we talk about how our relationships with our husbands, to some extent, yeah, I got, and our lives on that particular day, you know, we talk about our children and our concerns with our children. That's also takes up a lot of time on children, You know, very well within a family. There are always things to talk about, what's going on. People always have concerns and worries. Yeah". "We have quite a lot of contact, generally speaking by email. She's (cousins) quite important in my life, but not when it comes to making any decisions or that kind of thing. So probably after the friends, What do you mean by decisions? Who, in which ways would other people be involved in your decisions? My sons and my closest friends. In terms of asking them for advice for what you should do or them? Yes. That's right, or any help that I need". "We became very good friends and she said she lost her husband earlier this year. So she's lately very much on her own at the moment. And she's become really, really close. Since losing a husband, which was obviously devastating to, to all of us, but now I find them in contact with her in ways that I haven't been before. Yes, we emailed and we would arrange to meet each other and see each other as a foursome. Or we, when we lived close, we go out for dinner. And when we moved away, they'd come down for a couple of days to stay with us. But she actually just has been texting me a lot more and sending photos to me about when we were all together. So that's, I hope has helped her as well. And I think that will, if she's promised to come down and stay with us. So I hope that happens. I will go up and see her, even if I have to stay in the hotel, I can go up and in and I will go up and see and make sure she's all right. So that will be nice to catch up. And I think that's been, that's actually some have become strengthened by her losing her husband yet. She, of course, she still wants to carry on her life. And she's finding a way through this grief. Nobody knows how long it's going to last, when you lose someone, you just,

			you can't, you can't tell can, you know, and so yeah, I feel very close to her and you know, I'm very sorry and upset for her still. So yeah". "It's an irregular contact, but one that matters. In which ways does it, does it matter? They know me, they've known me over a long period of time and they know my circumstances. Yeah. And theyre, I suppose supportive is the right word".
	Activity/Interest Group	• Tends to be articulated around local friendships • Disrupted by COVID when interest is linked to public space • Not 'in' someone's life unlike those providing emotional support or disclosure. • Interactions dictated by interest/activity group. • Light hearted interaction – jokes, chit chat. • Exercise • Differentiated friends from neighbours based on shared interests	"It isn't perfect. I'd much rather have friends locally who I could go for a walk with and had something in common with, but that actually hasn't happened really. So, (I'm a) little bit dissatisfied, I suppose". "Well one of the major problems in my life, really this year caused by COVID was that I was working one shift a week, the [Charity Bookshop], where I had fairly close relationships with the people I was working with, but those friendships have really drifted away. They've all got their own lives and we're not seeing each other regularly. They've all got problems. So that's been quite a major loss really because we had, we had the love of books in common. We had a lot in common, really culturally say the word, but that has gone, which is sad". "but my Tennis colleagues, because I play tennis with them twice a week in most cases. And so, you know what it's like in a sports situation where you have banter and you have lots of jokes. And we got we after our tennis, we, we play eight 30 in the morning. And so we go down for a coffee on a bike and roll or something like that. And you know, the conversation flows and people swap jokes and stuff like that. And that's, that's important to me. And I've, I've been missing out because of course there's been no tennis. So in this lockdown, we did have a gap between the first and the second, which was lovely. But then I found the second one, the second lockdown, but partly because of the weather has been much tougher. And, because then we've had no means to meet up with, we couldn't stop in a cafe and have a coffee together. So yeah". "Yeah. I suppose there is one or two people who our relationship is more through Tennis. Therefore I have no other reason for phoning them".

			"We're missing our other social activities, like going to play bowls, like going to play golf. We are missing that dreadfully it's, you know, it's, if only its just seeing people let alone talking to them. More importantly, we're not getting the exercise we used to get". "Yeah, it was a very, very good at one time thee was probably five or six of us, you know, who would regularly meet up and, a bit like being in a pub a local pub we'd sit around a table and take the Mickey out of each other and crack jokes, occasionally get into serious discussions. You know, that was, that was really good. Sadly, though things have changed, people die, people move on". "I belong to the local tennis club, but we just tend to go and play tennis with a set of friends or the same sort of colleagues, but would never mix socially. We also belong to the local national trust association and we actually produce the newsletter four times a year for them. And we organized walks, which both I lead, and other colleagues in the association led. But then again we never mixed socially. Everyone sort of dispersed and kept to themselves, you know? … A couple of them I get on very well with. But they've said oh we've had so and so over, round for a meal etc but we've never been invited. And we don't feel that … We have invited a couple of them, a couple of times they've come around mainly during the lockdown when we could meet out in the garden and we've had sort of a tea and discussed, you know what we were going to do club wise, we've never been reciprocated back to either their garden or otherwise. Some people just like to keep themselves to themselves. Some of them have been here for about 50 years I suppose, we've only been down here 10 years. So we're sort of the new kids on the block still." "there's an awful lot of retired people playing there (tennis club). It used to be busy in the evenings because that's when people working, people working are able to play tennis. But with people of my age group, we want to play during the day and that club lends itself for that. So, the tennis club has been very useful for making acquaintances". "Well, I suppose you haven't really got an awful lot in common with your neighbours? So, when you're outside and they're outside and you're talking, you chat to them and that sort of thing. But I don't think, well, certainly for us, it goes any further. You know, they've got their own families, we've not got a family, so we just say we've got each other and our friends, that's fine with us".
	Reciprocity	• Living alone associated with becoming a more demanding friend	"One is a single widowed lady. Who's, who's very, very dependent on me. Actually. I talked to her once or twice a week, she's the sort of friend, that she wants a lot of support. And she, she very rarely wants to know about me or my life. Although I've known her very many years, that's quite

| | | • Privacy and boundary setting | challenging. I mean, this week she's talked to me twice and she didn't once say, how are you? Which is terrible. … I'm afraid, as I'm sure you know, as people get older, they become much more self-centred. … They just want to talk about themselves. They don't, they don't ask questions. They're not interested, especially, especially if they live on their own. … I think obviously living on your own means that you can't share everything. You've got to keep it to yourself, or you've got to phone somebody up, or you've got to email somebody, or send a text or whatever it is. You can't just share your thoughts, can you all the time, you've got no one there for you".

"Right at the beginning of the first lockdown, we had calls "are you alright?", From various people. I must admit I wasn't so proactive, but that's just my nature. I don't like to get my nose in other people's business too much. But one or two other people have got different ideas. On this second lockdown the reaction from third parties has not been the same, it's all, it's been very muted".

"The ones that have stuck as friends and still phone, even if it's just once in six weeks or whatever they will be as they were. And I will not to be rude to the people that used to be in the circle. … But if it goes back to where it was and we all have the same sort of a circle of people meeting each other, probably half of the ones that we will use to share tables and do stuff. I won't be pushing the friendships now. … My attitude is quite hard-nosed on everything in the world. If they don't want to know me now, they can bugger off when they go back".

"And then I have two other friends, again, who live away. So I don't see them, but we talk on the phone. One is a single widowed lady. Who's, who's very, very dependent on me. Actually. I talked to her once or twice a week, she's the sort of friend, that she wants a lot of support. And she, she very rarely wants to know about me or my life. Although I've known her very many years, that's quite challenging. I mean, this week she's talked to me twice and she didn't once say, how are you? Which is terrible. Yes, she is. She's so self obsessed. Yes. I bet that there might, there are people who I come in contact with most frequently as for local friends. I've got.

"she's an unusual person in that. She's, she's a good listener. that's my quibble with a lot of my friends. You can be talking and they butt in, they interrupt and they don't let you pursue your train of thought, but she is an extremely good listener and she will talk but she'll also ask me a question. She'll ask me about, well, particularly my youngest son, who's, she's heard an awful lot about with his up and down romances. Yeah. Yeah. So I value her. I do value. Yes". |

			"Even though I've known her for 18 years, she wouldn't be able to tell me the names of my children. She's just not interested really. Although I know a huge amount about her children. I'm afraid, as i'm sure you know, as people get older, they become much more self-centered. They just want to talk about themselves. They don't, they don't ask questions. They're not interested, especially, especially if they live on their own. I mean, the friends I've got to live on their own. I mean the Oxfam manager was an example, she would come into work in the morning and never, ever asked her volunteers how we were. I mean, she, she just wanted to tell her about how she was and what she'd been doing, et cetera, et cetera. And I'm sorry, it's not really good enough, even though I was fond of her. I think obviously living on your own means that you can't share everything. You've got to keep it to yourself, or you've got to phone somebody up, or you've got to email somebody. or send a text or whatever it is. You can't just share your thoughts, can you all the time, you've got no one there for you. I mean, I haven't lived on my own when I was young, so I understand a little bit, but I did notice with my elderly relations. I was very close to two aunts, and I was close to my mother, but as they got older, they, they just really wanted to talk about themselves".
	Instrumental Support Exchanges	• Close friendships linked to perceived reciprocal support • Local friendships linked to instrumental support exchanges. • Looking out for those who live alone	"I would like a couple more close friends nearby. Particularly now and again you want someone to help you out with something, i've got noone to help me. You know "can you hold this up here" so I can screw some holes in or fit something in the car or i haven't got anyone to help with stuff like that". "We, you know, throw some emails and text messages around, but not in any, in any significant way or any structured way. It was just generally keeping in touch. Cause you're conscious that, you know, some of the guys for whatever reason are, you know, they live on their own. Most of the guys that I play with, we're all seniors. So we were all over 65. So, you know, not everybody still has a partner. So you do just tend to keep a little bit of a look out for those guys that you know, who might be on their own". "So, so really it's like my, one of my closest friends who lives just round the corner from me. The sort of person that, you know, you could phone in the middle of the night, they would be there for you. I've got quite a few friends like that. There's a difference between friends and acquaintances and you don't have many friends, you have a lot of acquaintances. … I know that I could phone them without hesitation, if I was in trouble and they would come". "We talk to our friends on the phone as well and keep in touch with people I know who are on their own who I used to work with. There's a guy down in Somerset and his wife died about three

			years ago now and he really feels it. So I ring him up at least once a month to talk. And one of the secretaries that I used to know at work she's on her own. So I give her a call, see what's going on. "Well the neighbours are just good becuase they're there and if I need them, it's, it's instant and it's reciprocal arrangement. So it sort of works in two ways. My immediate, next door neighbors are in their eighties, stroke, nineties. Yeah. And we just keep a whether eye. Their daughter and son-in-law are there every day the nurses are in and out, but we still people, whether eye, you know, we're there if we need, but we get the phone calls every now and then "Is, so and so due today.. yes". So bits and pieces like that? Neighbors opposites. Yes. He's much younger fella and a young daughter. So my wife is always sort, Oh, it's so, and so's birthday, you have to buy a present. So it's, it's, at that sort of level, but we don't go in each others houses or gardens and things like that. We just know we're there and if i'm out mowing the lawn they come across for a chat and sort of, we keep up like that other neighbors, similarly getting older in life and not in the best of the health and again you just keep a weather eye. "Well, the neighbours are just good because they're there and if I need them, it's, it's instant and it's reciprocal arrangement. So, it sort of works in two ways". "My neighbours, the other side of me, she's a lady in her fifties, I think. And she was a furniture to unretired, but she's taken up gardening. So she is my Gardner. She comes across. She said, well, do anything you want me to do? And yeah, she comes and cuts across cause my husband's not able to do it anymore". "I was doing their click and collect and all that for them … helping people out that I consider appreciated it without taking advantage. If you know our meaning, did you get my drift? Well, I'm saying there's some people that you can help who just abuse it. … They expect it. But you know, I help people that appreciate it. And you know are not in a position to do things. But I don't expect thanks, but I want to feel that they appreciate it, you know what I mean, without sort of being a hero or anything. … Like, I take my friends dog out. She can't take the dog because she's a hairdresser but then I quite enjoy having him, so I help her out, but then she cuts my hair. So that's the way it goes. But then you don't expect that don't expect her to do it. And she doesn't expect me to take the dog out. We just do it for each other". "Yes. I've got very good neighbours. We all know we're there for each other. We will help each other whenever anyone needs it. But we're not forever knocking on each other's doors or things like that. You know. We are all there for each other and we know we're there for each other.

			We're sort of five houses around me that we're all in a group. We'll meet up a couple of times a year, all of us and have a meal out somewhere, something like that. But then no, we don't bother each other unnecessarily".

"With regards to the people on my circle. Well I think my family will probably become more important because as I get older, I may quite likely need to rely on them a bit more to do things for me. At the moment I'm quite independent. I can do everything myself. So I'd have to call on them to do things for me. But of course, as I get older, I probably will. So I think I will become more reliant on my family. So that wouldn't, that wouldn't change particularly. I wouldn't want to become more reliant on my neighbours. So I probably wouldn't need to because my family live so close. It's different if you haven't got family nearby. I think people have no choice, but to rely on their neighbours a bit more, but I don't think I would be in that position". |
| Friendship change | Stability of long term friendships | • Bereavement and health changes as the one exception to the 'long term friendships don't change narrative' | "I'd still have the same sort of way my life is structured with my friends and relatives and things. I've sort of kept in touch with everybody, I've not cut myself off. Yeah. Yeah.

Interviewer: How about in maybe sort of five or ten years' time?

(Laughs) Oh god, I'm 71. I might not be here. No … it would still be the same because that's what my life, you know, that, that how my friendships are and that's, I don't think they're any different now to what they were five or six years ago. So, I can't see five or six years' time there being that many, much different".

"Yeah. I think it would stay more or less the same apart from a bit more close contact with, with work colleagues. Yeah."

"I'm not sure that I would have done really. I think I would have put everyone in the same order that I already have. Because all the things you order I've given you is all static. They're always there. Whereas the people at the community centre come and go, but you don't have long, long term connections with anybody. Whereas the people on my circles are all there all the time".

"No, not really. The only change I can foresee is me becoming more reliant on my family. But apart from that, my relationships move along in the same way over the years and probably will continue to do so. COVID hasn't really affected my relationships at all, life's on a pretty even keel. I'm very lucky really". |

| | COVID related Change | • Holidaying
• Activity groups
• Restaurants/Pubs/Hotel closures
• Spontaneity | "I honestly can't see a great deal, changing. You know, we're very settled in our life and how we lead it. Other people may come into our life. I don't know. We haven't probably haven't met them yet. No idea. We, we enjoy our holidays. So, you know, we were off cruising and stuff, this, so you never know what's going to happen or, or where we're going to go. And so those things, holidays, et cetera, have changed with the pandemic for us. So we're not going to Dubai for a start. I'm quite pleased about that in retrospect".

"They're all equally important and have been for some years. … Yeah. Everyone else is, is there maybe if I joined another art group or took another class or something, maybe I could meet more people doing the same thing. And that would be another dimension. I wouldn't be adverse to doing that. I maybe the, the golf ladies have become more important because it's a small group, a lot of them are a little bit older than me and single. And they, I know they've struggled throughout this pandemic. So maybe I would have gone out with more. Maybe I would have, we, would've made more of an effort to meet up and have lady's coffee mornings and lunches and things like that, which hasn't been possible. So they're still there. And once this is over, I think we'll perhaps pick up that again".

"Well, obviously seeing, seeing friends that we haven't seen for a long time, going to stay with them and, you know, going to hotels for a couple of nights, that would be really the only anything apart from going to the pub and, you know, going out for meals and that sort of thing. But really our life is fairly, you know, on one level really".

"I guess the other thing is, is you one of the things I think that, you know, lock-down and everything has robbed us of, is our ability to be spontaneous. You can't just think I'll tell you what, let's go down the pub and go two minutes later. Because even if it was open, you've got to book and you've got a table and all the rest of it. … You do tend to calendar, calendarize, everything you're going to do organize it and you end up organizing it several days out so that everybody's around and, and prepared and all the rest of it. It's so I guess, I guess that is, is certainly is a difference".

"There is differences as my social life used to be a lot more hectic. Yes. All the people I've mentioned to you would be going out and eating out and selling all sorts of things. Last year. I think we went abroad about three times with friends, locals. We haven't done that. We have, we did have two days away and with a couple of friends, but we were in separate places. It was all very weird". |

"I used to go, I used to go line dancing, so I knew quite a few people there. But obviously I haven't spoken to really any of them and my teacher lives up the road so, I sometimes knock on the door and ask them how they are and thats about it really".

"We used to meet up probably about once a fortnight and go for walks, perhaps have a pub lunch. And then once perhaps every six weeks we'd go out for an evening meal together. But we haven't done that since the pandemic started, although we've done some walks and a couple of pub lunches when we were allowed to. One particular friend, who's had a lot of operations, difficulty walking, but he's now well on the way to recovery all around and he's, he's walking on his own quite well. So we meet them up on the, we live right on the cliff side at Barton on Sea, so there's about a two mile walk along the cliff and they come the other way and we sort of meet socially distant. (laughs). We catch-up with our news, because they isolate themselves quite rigorously".

"The restrictions are frustrating, but it hasn't had a massive effect. Its changed my habits very slightly but, but not, not significantly. I have probably a bit less contact with the sister. I change my shopping habits slightly in as much during the first lock down, I contained myself to one shop a week. These days I'm doing a one main shop each week, but I am doing other bits in between, you know, there was a subtle changes, but no the pandemic hasn't had a massive effect on me, partly because I am on my own, used to being on my own. I think if, if Jene had died a week ago or a month ago, or probably even a year ago, then I would feel a lot more exposed now, than I do. But, I've had well long enough to get used to being on my own, and therefore the pandemic hasn't had a dramatic effect in that respect".

Well, one thing while we're waiting for the vaccine to take effect is that we do a lot of travelling and cruising as well. Because my daughter works for a cruise line, carnival cruises, which it P&O Cunard, et cetera. So we get discounted cruise trips. And so we'd like to go on a couple more of those. Which is totally out of the question until the Pandemic is well and truly sorted. We've got 5 ships out in the Bay here and they've been there since beginning of March, you know, and they only come in to restock and change crews. So it must be pretty lonely for them as well. And there's some far flung places we'd like to fly to. I would like to go to Japan because I worked out there for a while. So I'd like to take my wife to see that and at least one more trip to Canada. And so, yeah, so there's a lot of things that are in the offering that hopefully they can get hold of this pandemic sorted out, and not have anything come up like a mutation of it.

			"Florida who we are very close to golfing, met golfing on the golf course and have sort of remained friends. We obviously haven't seen those this year, whereas we would normally have, have seen them and maybe had one trip winter trip planned to go to Florida to play golf. So, so that's been just emailing really. So that's and the emails have dropped off. And I don't know, you maybe don't find your emails as exciting to write. So I'm sure they're not exciting to read. Cause we're all saying, seem to be saying the same thing you wish each of this families are well, and they're feeling well, just getting through this, this horrible condition that we're all living with".

	Retirement		"You know, not working, you don't interact with, with the people you did when you were working. And probably you don't sort of go out so much, I mean I used to be in travel. So, you know, I used to go to different places in the world and my husband's similarly had a job where they used to have trips out to various places on business so that they, of course, that stopped when we retired. So, no, I think it was really basically stay the same. It's just a few things that are a bit annoying at the moment, but I'm sure there are people who are, I find it very difficult, especially if you're on your own". "So I haven't got a great group of friends here sadly. When I was working, I was working in Bournemouth. I had nice people I worked with, I had friends there, kind of thing, but that's a distance away. It weren't people I kinda mixed with, we couldnt really meet up for an evening that much or anything like that. So now … and I actually, I had to retire due to ill-health in 2004 so some time ago as well". "Yeah I can, because by then, hopefully I would have retired cause I'm coming up to 60 I'm 60 next year. So hopefully I would have retired. So my work colleagues will probably ease off a bit because I won't see so much of them, but hopefully I'll have more time for family. And as long as my brother, who's 10 years older than me is still on him because I know we quite like doing things together, him and his wife and me and Paul. So we will probably do".
	Money		"Oh, well they we're inviting me, but I guess, couldn't be bothered to go after a while (laughs). Yeah. It, it could get quite expensive and I, I had no income, things like that, but there's some very nice people, you know, I would like to see a couple of them again".
Barriers to friendship creation/maintenance.	Introversion/social motivation	• Gendered management of social relationships	"I'm naturally a shy person. So I don't easily go out and make friends, and I was very much on my own". "I think if it was down to my husband, we would never leave our house. We'd just be here all the time. I mean, it has happened now, but I, I tend to arrange all the holidays, any get togethers, anything like that. He's my husband. When we, when I first got together with him, my family always joked that he didn't talk for the first six months to any of the family members. Cause he's very quiet and he is very reserved, very quiet. He doesn't like, doesn't like being put into social situations. If he doesn't know people, he doesn't particularly like that. And he can get grumpy about things like that". "A few of the ladies used to say the men widowed that they're not very good at getting themselves out into the community and doing things, whereas the ladies do you see. So I think it's a general thing, which is why I think my, my brother-in-law Den has struggled a bit more since my sister's gone, because he just doesn't do anything for himself in a way he doesn't help

			himself. We've made so many suggestions to him to do this, do that. And then he moans he's lonely". "I think it's just because he isn't motivated, for some reason. The boys suggested to him to get a dog that he could walk the dog, but (groans) 'then you got to look after the dog' he doesn't want to do that. You know, I, I suggested, you know, looking in your community and join our whole thing. … He just doesn't seem to have the umph to get out there and do anything for himself. I know it's scary, but I always have a go trying to meet new people or do something. "Not particularly, I'm not, I keep meaning to join something, but obviously this hasn't been a year in which to do it, but yeah. You know, we, I do from time to time attend local meetings, various societies have meetings into, this is very much a retired area as you may or may not know. might. There are various things that would go on and I do attend from time to time, but they don't have a major impact on me".
	Home relocation	•	"We we've moved around a little bit. So we have lost touch with a few friends that we were close to when we lived in a different place. "I met some ladies that, well, a couple under lady on her own single lady that I used to be very close to and in a nice to sort of go out to get that we all went out together and then we moved, but that's that's well over 15 years ago now. So they, that was difficult to keep in contact. So we haven't in fact kept up a relationship. They've moved, we've moved on different, different ways really. So in which ways was it difficult to sustain contact? The distance was probably the most difficult because if you're not prepared to drive to go and see each other and then stay overnight or something, because you couldn't do it in a day trip, you know, it takes more organization. Yeah. And so do you tend to drift apart if you just finish your telephone conversation with, well, I'll call you then soon and we must arrange something, but that actually never actually happens. You promise all these things, you think it's a good idea. And then other things take, take over life, takes over and different decisions take over, I think".
	Health	•	"I find it tricky because part of my health, I don't have always a lot of energy and you know, I might think, Oh, I'll go and see so-and-so this weekend. And then I think I haven't got energy. I've got the energy for those conversations. Particularly my friend, Sally, she's lovely, but she can talk for England and you don't get to talk sometimes it's restful, but sometimes you think, or, you know, or you hear about is at the moment is, is bad things. It's hard to totally take that all the time, but I would hope that we would have more time for going out for coffees and have lunches and things like that". "So she's a little bit further. So I don't see as much of her plus she's had a few problems in her marriage lately. So it's caused our, our usual get togethers haven't happened because her

			husband's .. we think he's got depression, but he won't take anything for it. And he's saying that he doesn't love her anymore, but they're still living together even after about a year, this has been going on. So yeah. And we used to get together as a big group. They're her children, mine. And, but we haven't done that for a long time now".

"Well, I think it's partly, everybody's getting older, and you have in your mind before you get to retirement that okay i'm still able i'll be doing things and enjoying things. And it gets to be very, very difficult to sometimes. Then with racing, that might incur hooking the trailer up and going away for three days and staying bed and breakfast or camping in a motor home or whatever you do and you carry on. And as you get older, it's probably more tiring than when you're young and then when the government shuts everything down. It will be very difficult for a large part of the crowd to get back to doing these things". "And it's quite sad really because you reach a certain age where if you want to get race licence, you've got a job holding onto it over a certain age. It will, if it carries on [after COVID] the crowd, I know will be out of it because of getting a medical and a race license".

"I don't see it changing a great deal. To be honest. Yeah. Neighbours might come into it a bit more again. As you get older, you become slightly more. I don't like the word, but I'll use it, needy. (laughs) … helpless (laughs). But your guess is as good as mine. You know, we could get run over by a bus tomorrow and It won't bother me then will it".

"As long as we can maintain our current level of health, that would be nice. Everything hinges around that. So yeah" |
| | Personality/Value clashes | • | "we did go out as a six a few times, but the boys really could not get on with Simon. He's one of those me, myself and I, and he's just always talking about himself, what he's done, how wonderful he is and that sort of thing then. And they can't cope with that. So we tend not to do that anymore, which is a big shame because Wendy is lovely. So I tend to see Wendy and I try and avoid Simon as well if I can".

"for quite a few years, he wouldn't ever come to anything we did as a family. And wasn't sure why, but we, we, we all thought he was gay, but he never ever told anyone. And it, it wasn't until one year I actually asked him and he said, yes. And he said, I'd be wanting to tell you for ages (laughs) … And, and it did cause a little bit friction at my work. … So I have had to bite my tongue in the past or I have occasionally. I think I've only ever told a couple of people there. I have a gay brother, cause I just know they're going to judge him without knowing him". |

| | Cultural boundaries | • | "There's a lot of people here who are very friendly. Well, we're not in and out of each other's houses or anything like that, not that friendly. In the summer it would be nice to share a barbeque or something like that but that hasn't happened".

"But I think the English often don't like to get too friendly with their neighbours, a lot of them. Because I think they think they will be popping around all the time and I suppose that's the same everywhere - might be more friendly up more North? But I think people are fairly not unfriendly, but they like to keep themselves to themselves down here. Unless, they are friends they've had for a long time".

"I've got very good neighbours. We all know we're there for each other. We will help each other whenever anyone needs it. But we're not forever knocking on each other's doors or things like that. You know. We are all there for each other and we know we're there for each other. … No, we don't bother each other unnecessarily".

"So yeah. So, well, they're my neighbours, really. I live in a little close as you know. But there's sort of 10 houses, so we're all quite close. You know, we got each other's back sort of thing without being sort of in, in, in, in each other's house every day. But there's a couple of neighbours you could count as real friends and a couple that are sort of acquaintances really, and sort of really that's it really". |
| Enablers to friendship creation/maintenance | Attractiveness of local area | • | And then of course, the other bit is that because you live 300 yards away from the sea, you do tend to attract visitors. You know, nobody would have wanted to come and see us when we lived in Coventry, but, but Barton on Sea's a bit more attractive. |

COVID-19

COVID-19	Themes	Sub-themes	Quotes
Relationship Management	COVID-19 Risk negotiation	• Conflicts arose when two parties in a relationships were not aligned on their interpretations of the rules or their willingness to abide by these. • Judgement on those not aligned with one's one interpretation of the rules or interpretation of the importance of the rules. • The 'less vulnerable' enforcing distance on 'more vulnerable' member of the relationship.	"We would have, have seen our children because they don't want to come near us. We are in touch with them. It's even with a we're on Skype. He comes on Skype a week. We talked around that around the, you know, on the video chat". "If I could have done it I would've done it … This is difficult because one of our neighbours who we are close friends with, they were supposed to be coming on holiday with us and obviously this year they couldn't ... A couple of them won't go out, won't do things, but you know, then others of us would if we could". "A couple of them won't go out, won't do things, but you know, then others of us would if we could. You know, my other friend, I used to go to the pub with, we can't go, couldn't go. But there are a couple that, you know, for their own reasons, haven't, hadn't done anything, but the majority of them are still. You know if I say to my friend, "do you want to go for coffee?" "ohh yes". "Yeah. I miss going and seeing the neighbors in their gardens and chatting, you know, in their houses. But we've come to that. So I accept it. I won't break rules. I won't, if they tell me I stay indoors, I stay indoors. And it makes me angry when I see people not doing what they should do, because that's making a spread even more. … We should all try and look after each other". "It's, it's just my husband and I at the moment and don't get me wrong. We get on fine, but it's nice to have other people as well and go out and go out for lunch. We can't go out for lunch. I won't go out for lunch. I know I could go up and it's probably quite safe, but we can't have lunch or go out and have coffee. Let me go and do the shopping together. We'd always have a coffee while we were, I can't do that. It's silly things like that, that I miss. My neighbor said to me, well, why don't you can't have a meal? Cause we've got friends that do go out and have a meal. And I said, no, it's not worth the risk. There's no point take a risk that you don't need to take". "I'm not one of these people I didn't need to shield. So I thought, well, I'm not going to live the next, however long this goes on for just sitting in my house, twiddling my thumbs. I'm just going to go out and about and do what I want to do, but do it in what I consider to be my safe way. And you know, I mean I know people who've reached the stage now where they stayed in for so long that they are now frightened to go out, which you know, if you've done it since March. I don't consider that living. I, I, I'm not going to let it control me. I mean Boris is doing a good enough job

			of trying to control me. (laughs). So, you it's not really, it's impacted on my life, but not to a great degree".

"His partner decided, he was a bit older than me, but she decided him and his wife would go into permanent shielding. So apart from speaking to him, a couple of times on the phone, he is not playing tennis because he's concerned about his health. And so he's one less person that would be in the group. I would have thought would have been there all the way through, so he's not played tennis now for seven months, something like that, which is very surprising".

"I'm a vulnerable cause I have a lung condition. So I haven't been wanting to go out and about and do a lot, lots of things for obvious reasons. So maybe when that's all, hopefully the vaccine and everything, I will start doing that again. Yeah. But yeah, I do miss not just being able to meet up with friends or, or join a new yoga club or something, you know? Yeah. Yeah".

"I just go for walks with my husband or on my own. And you know, I'm quite happy to, to do that. Other people feel a bit, you know, intimidated, you know, with people passing and, you know, some, people are really funny about keeping distance. I mean, well, I am but you know, some people just don't like to go out think and a lot of them are older as well. So maybe they feel that they I dunno they'd rather not leave their home".

"the countryside is becoming so much more busy according to our friends. And they really fear for walking along these footpaths and who they haven't to dive into a hedge to avoid. And then they've had other dog walkers. So even they said simple things like coming to a style or a gate that you've had to. And they'd been worried about touching the gate and opening that because how many other people have done that on the same day and could, you know, passing this, this dreadful virus on. So which honestly I would probably never even thought about. I've just walked through it and assume that everything was fine. I wouldn't want to disinfect it every time. I think this is definitely how this particular couple live".

"Yes. Well we were even during the, the first lock down, they turned around and told us, we must stay inside for three months. And that ended up being a lot, longer. My wife got the call two weeks before I did. And then they said, Oh, you got to stay indoors, mustn't go out there shopping or anything. For about six weeks. We were, we were good people. We got fed up with it. After that we went out, we went for a walk. There's no difference in going for a walk. Right where we live. Then it was going out the back garden, talking to your neighbors. You just avoid people. Simple. So that's, that's exactly what we did". |

| | Technology | • Stilted conversation
• A degree of discomfort using video chats
• Pandemic enabled greater interaction with some network members (family quizzes) | "The work that I used to do meant that I spent quite a lot of time using, you know, various routes to, to, to work with people who were overseas. So, you know, zoom and FaceTime and Skype, et cetera, I've been using for years. I have found at least two of our sets of friends, I have needed to talk through how you do all of this sort of stuff. But just from an IT point of view, you tend to forget that not everybody has the same level of IT familiarity because they've never needed it. When you run your own business, which I did for a long time. You, you are the IT department. So you get used to working out how to do these things or you or your don't.

"we used to all get onto zoom and do a quiz. So probably saw more of them than we usually do because usually it's only Christmas, Easter. We tend to see the extended family. So that was quite nice in a way, but it's kind of stopped again now".

"Yeah. Well we say we've got some friends who live where we used to live in Surrey. We keep in touch with them every couple of weeks and speak to them on, on the, on iPad and you know that's quite nice but others we just sort of ring up every now and then. Because everyone's stuck inside and no, but I suppose you haven't really got an awful lot to say".

"We've zoomed a couple of times, but you could tell they were uncomfortable with this sort of procedure and environment. So I think they only did it twice and the conversation was quite stilted at times because two others the ones in Burwood we used to go caravanning with, well we still do, go caravanning a lot. So we've got quite a bit in common and the third couple, the one in hospital he is mainly sports orientated and sort of local activities, which we were not quite so involved with. So it was a two against one conversation a lot of the time (laughs). But we got on well, we had a bottle of wine on the table, all three of us. Needless to say the conversation eased after a while. I didn't have the sort of personal interaction I think the personal contact, which is different from even you and I speaking, I think we have a better contact than we had with them. So yeah it's a strange arrangement. Speaking into a screen, making sure that your face is in the screen and sometimes when the internet wasn't … so yeah speaking on a screen I think they found difficult. Occasionally the internet signal used to drop out".

"We first got introduced to it (zoom) because my wife belongs to like a lady circle and through the gym club she goes to and they all wanted to do this zoom meeting. So I had to download the app and everything and set it up. And there was about eight of them on the screen and as they do they all wanted to speak at the same time (laughs). So it was all flashing all over the place |

			(laughs). So that was the first introduction to it. And then we introduced our friends to it to give it ago. Yeah, we try to keep up with the modern technology as much as we can". "It's hard to, it's harder to hide things when you're face to face talking to someone than naturally someone on an electronic screen. So I like to think I can read to people and try and read between the lines and when they say yes, I'm falling, do they really mean it? So I like, I like to try and analyze what they're actually mean in your, whether they are okay, so that's good" "The Canadians who are against all technology, well, yes, have had to force themselves to deal with computers and to deal with emails and answering them. And if they know that they want to talk to anymore, they're going to have to do it through Skype or FaceTime. So they gradually coming more on board with that. So, whereas we used to see them maybe twice a year, cause we were lucky enough to get away for two trips. … But now we've spoken to them at least three times over the last four months or something, which is more than perhaps we would have done…. So, you know, they've, they've had another grandchild which was nice to catch up with them and express, you know, congratulations with them. So that probably would have slipped by if we hadn't have been involved in this technology, but we all we all rely on now. So, so that, that that's been quite good.". "Yes. One of my sons, the equipment he was using was not great. It was crackling and everything else. So it was difficult to understand what he was saying. Some of the time I was missing a word here and there, and that was kind of annoying. Cause I would have to say, sorry, what did you say? I feel like this is hard work and I can't say, and I enjoyed the experience that, that much. I didn't want to talk to him, but because of the, the way we were able to converse".
Relationship Enablers	Built Environment	• Weather enabled positive, socially distant interactions.	"That is the other big thing I would mentioned during the lockdown. We, because we weren't allowed to drive anywhere. We discovered new places to walk around, you know, foot paths that we'd never seen before. And we, and the weather was quite pleasant. So, we really enjoyed exploring the area, which we hadn't done before. That was a positive. We don't have a dog, we don't have kids. One of the big things when people go out with dogs and kids is that they meet people that say, Oh, you always look nice. That's a, some sort of points where you start talking". "So you end up in a place where lots of people are similar to you. People tend to have similar values to you and therefore there's just, I wouldn't say there's no. I mean, you know, everybody

			sees something or other every now and again, that I say is not the way they would do it, but I think there's just less hassle and aggravation, you know? And that's, that's basically what you want. And there is a, and again, I, you know, I guess it's another symptom of, of, of maturity is that the only change you want is to change that you've decided that you want, you don't want change imposed on you. So it is, it is a physical impossibility for somebody to decide to come along and build 2000 new houses here because the only place there isn't 2000 houses is actually out in the Bay. So yeah. Things like that, you know, there's just, just, you know, it's just part of a more, I don't want using the word comfortable cause it kind of makes it sound like you're complacent, then you don't want to change and all the rest of it, but it is, it's just a little bit more simple”.
			“Well you see down here most people are retired so theyre the older generation, you know, if you go out for a walk, you can always sort of speak to people and they will, they will acknowledge you and speak. You know, if you say a hello, everybody says, hello back they don't just blank you”.
			“nothing has really changed because we live in a beautiful part of the world. The, the coast, you know, is 400 yards away so we can choose when we go out for a walk. So we could avoid, perhaps the people that go out during the day and want to walk on the clifftops or the beach or whatever, where it might be busy. So we can avoid that by doing it either early morning or late after an evening”.
			“Well, I'm not very sociable, so I wouldn't go for coffee morning at the church or anything like that, but we sort of walk every day and you do meet people walking and invariably they will pass the time of day with you and acknowledge your existence, which is rather nice than being just passed on the pavement and hearing the voices”.
			“this area is particularly good for walking because it's safe. The pavements are good. Yeah. Wide pavements, lots of lights. So you could go out of a new thing, you feel safe. So I think that's really important because if, if you're on a mobility scooter, or if you're elderly and you can't get out and you feel in danger, you feel scared of what could happen then to be in this sort of area, I think is, is one of the bonuses. Yeah. So I'm really glad that we sort of chose it here because you don't have to get in a car to go shopping it free. Every time you need something, you can walk and you can go out for drink and you can go for coffee and things like that. So we've got lots of amenities around here. And the, I think the church groups, you know, they've got childcare facilities and I'm sure they have their own internal groups. I don't haven't joined any of those. It's not really my cup of tea. So I'm, I'm sure there is a community, more of a community spirit than I've even investigated”.

			"Well, this lockdown has felt a little bit different. Because the weather's not been so nice and it's the darker days, but I've still kept up the same level of contact. Really. I think now the weather's starting to get a bit colder, so we've still been seeing each other outdoors up to now. It's not been that cold, so it's not been too bad, but it's turned a little bit colder now, but we've only got a week to go and then we can hopefully visit one another indoors". "The thing is these days everyone comes and goes in their cars. You don't go out walk down the road and chat to your neighbours like you used to. You know, life with neighbours is more isolated than it used to be years ago, just by the way we live. And unless they just happened to be out in their front garden and you happen to go out at the same time you don't really come across them to talk to. Not having a local shop, where you walk to and you bump into people, that kind of thing. And we all come and go in our cars, the casual coming across your neighbours doesn't happen to the same degree as it used to". "You can go down on the clifftop and bump in to someone. And you know, especially if they've got a dog or something like that and you know stand and have a chat to people that you've never seen before. And that's just the way round here. I'm lucky really that, you know, it's where we live. And then, you know, quite happy living here really. Yeah, we've not got the dog anymore but when you had the dog, you met regular dog walkers and, and you know, you see them out now and you still chat to them. So you can always, if, if you go out for a walk you know you will always find someone to chat with because I'm quite friendly person anyway. So I'll talk to anybody".
Relationship Enablers	Clap-for carers	•	"I think it's bought a lot of them closer because when we have that clap for carers thing in the beginning, we formed the group this end of the street because we're in a close. And we were out the front all of us every Thursday. And by doing that, we'd ask how each other were and catch up on bits and pieces. Because you don't normally do that. I mean the English, aren't very good at socializing with their neighbours. We had a party for VE day, out the front. So, we had a social distance 1940s party. I just think you get to know them through that. What we also noticed was the people who didn't come out or the people that didn't ask after you. So yeah. That's, that's been interesting. … We genuinely got a lot out of it because I've realized what community is. And it's something you don't, you know, we take for granted really. You know, back to my mom and dad's guy, community was everything. It isn't so much now. … I think it will change going forward. We've already said we'll have a big party when this is finished. So hopefully we will. … I think that was a catalyst for everyone to start asking each other and paying attention to one another more than they would have done. … I just see it's given us some contact and it's given us something to almost mark on the calendar because it was one social

| | | | event that you knew you could participate in. You couldn't do anything else. It was symbolic in one respect. And in the second, I suppose, in the second instance, it was a way of communicating with people. A way of seeing people".

"In those awful days back in, you know, April in particular, when essentially the only socializing you did was when you stood outside on the Thursday evening and applauded the NHS, which I think is probably the best invention known to man in terms of, you know, social balance. They were also the people that were out there, and it was an opportunity to, to talk to people, even if you were shouting across the road. … But I think, I think that, you know, the lock-down probably, I, I don't know, certainly has accelerated that friendship made it more important than it might've been, because, you know, for, for quite significant chunks of time, they were really the only people you could talk to. I think, you know, in, in, in a different way. I mean, yeah, we now have known all of our neighbours within a dozen houses on both sides of the road, in both directions, which we probably would have never done before"

"until we used to go out clapping for the NHS, we really didn't have a lot to do with them. So we've now become not terribly friendly, but a lot more friendly with our close neighbours, which is nice. But then I think after that, they may well go back to their own little worlds".

"In fact they all came out when we had that clap for the NHS. No, I don't think it's particularly changed at all. Remained pretty steady". |
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