Wave 8

The Dynamics of Ageing

Evidence from the English Longitudinal Study of Ageing 2002–16

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ELSA

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EVIDENCE FROM THE ENGLISH LONGITUDINAL STUDY OF AGEING
2002–16
(WAVE 8)

October 2018

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1. Introduction

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The striking gain of around 30 years in life expectancy in Australia, Canada, Japan, New Zealand, United States and Western Europe – seemingly ascribed to improvements in standards of living, health care and lifestyle modification – is undoubtedly one of the most significant human accomplishments of the 20th century. Estimates suggest that if the present yearly growth in life expectancy continues through the 21st century – as seems likely – the majority of babies born since the turn of the millennium in these countries will become centenarians (Christensen et al., 2009). We are not only living longer but we are also remaining healthier for longer: a higher proportion of people are free of illness and disability in their 50s, 60s and 70s than those of similar ages in previous generations. Related, people are retiring later in life and surviving for longer with what hitherto would have been chronic diseases with high case fatality. As a result of this expansion of the age continuum, there is new potential for older people to participate in society by volunteering and engaging in local and national political issues, and to impart their wisdom and experiences to younger generations.

The compelling evidence that life expectancy, including disease-free life expectancy, has reached unprecedented levels should not, however, mask existing and persistent inequities in many of these later life experiences. There are robust and substantial socio-economic differentials in social participation and digital inclusion, and some suggestions that the health of poorer people is deteriorating across age cohorts rather than improving. These changes have clear implications for central and local government, for third-sector agencies, and for the population as a whole.

These profound demographic transitions and their consequences inevitably point to planning considerations in economic, health and social policy. Fortunately, British policymakers have traditionally been respectful of evidence, and the English Longitudinal Study of Ageing (ELSA) was established to address complex, policy-relevant questions within a rigorous scientific framework. Supported by UK government departments and the United States National Institute on Aging, the study is an invaluable source of high-quality data about economic, health and social aspects of ageing in the population. Instead of simply providing a single 'snap-shot' of the lives of older people residing in the UK, ELSA tracks the multiple and complex characteristics of the same individuals as they move through middle to older ages. The study sample is periodically refreshed with new participants at younger ages to ensure that it remains representative of people aged 50 and older. It provides key evidence for policy issues across multiple domains, monitoring the impact of current policies and highlighting emerging areas of concern. Major examples of the study's contribution to policy include the role findings from ELSA played in the evidence cited by the Government Office for Science in the 2016 Foresight report on the ageing population (Government Office for Science, 2016), and in the 2015 Annual Report of the Chief Medical Officer on the health of the baby boomer generation (Davies, 2016).

New data collection

In the present report, we produce selected new results from the eighth wave of data collection, which took place between May 2016 and June 2017. In this latest wave, a total of 8,445 individuals participated in ELSA, representing 7,223 'core' members (age-eligible sample members who participated the first time they were approached to join the study) and 1,222 partners (who are denoted as 'core sample' members because they were not in the age range of 50 and older when they were first interviewed, or are new partners).

In ELSA, we typically include a nurse visit to participants' homes on alternate waves for the collection of biomarkers and measures of physical function. Wave 8 was a designated nurse visit wave, but unfortunately financial constraints prevented us from funding a nurse visit to all households. Therefore, we conducted a nurse visit to just under 50% of core members (3,479 individuals) along with 46 non-core partners. Table 1.1 provides an overview of data collection for all existing waves of data collection in ELSA.

In wave 8, we included a series of new, innovative measures that have broadened the scope of the study, including:

- an expansion of pension questions to address new developments in legislation;
- measures of risk preferences in the financial and health domains;
- further questions around generativity, such as being a grandparent, and the desire to influence younger generations and leave a legacy;
- additional questions on internet use;
- perceptions of body weight and whether respondents are trying to lose weight;
- questions about participants' sense of taste and smell;
- collection of blood samples into PAXgene tubes, which stabilise RNA, so providing opportunities for measuring gene expression.

We also reintroduced content from previous waves in order to monitor changes over time. These included the Sexual Relationships and Activities Questionnaire, and measures of fluid intelligence and sleep.

In the present report, we can only touch the surface of the rich historical and contemporary data available for the analyses in ELSA. As in previous ELSA reports, we have structured the report around three substantive chapters that address important issues in the economic, social and health domains (Chapters 2, 3 and 4, respectively). These are coupled with a detailed set of tables (Chapters E, S and H) that summarise data collected in these domains, including cross-sectional analyses of wave 8 and longitudinal analyses of the study members who completed all waves of assessment. This is a convenient way of presenting more results than is possible within separate chapters, though there are still important topics that we have not been able to include.

The topics of the three thematic chapters were selected during discussion with the representatives of the government departments that contribute to the funding of ELSA and with our International Advisory Board, and they were chosen because of their importance to both policy and research. These topics are: impact of the rise in the state pension age; area, social inequality and well-being; and determinants and consequences of falls.

Table 1.1. Data collection in waves 1–8 of ELSA

Year	Modality	Sample size			Source of sample
		Full sample	Core sample	Nurse visit	
Wave 1 (2002–03)	CAPI	12,100	11,391		Original sample from HSE 1998, 1999 and 2001
Wave 2 (2004–05)	CAPI + nurse visit	9,432	8,780	7,666	
Wave 3 (2006–07)	CAPI	9,771	8,810		Refreshment from HSE 2001–04
Wave 4 (2008–09)	CAPI + nurse visit	11,050	9,886	8,643	Refreshment from HSE 2006
Wave 5 (2010–11)	CAPI	10,274	9,090		
Wave 6 (2012–13)	CAPI + nurse visit	10,601	9,169	7,730	Refreshment from HSE 2009–11
Wave 7 (2014–15)	CAPI	9,666	8,249		Refreshment from HSE 2011–12
Wave 8 (2016–17)	CAPI + nurse visit	8,445	7,223	3,479	

Note: CAPI = computer assisted personal interview; HSE = Health Survey for England.

Impact of the rise in the state pension age

Chapter 2 explores the impact of changes in the state pension age for women using longitudinal data from ELSA. ELSA is ideally placed to examine these issues because it started a few years before the changes in state pension age (the increase from 60 to 65, and subsequently to 66, 67 and 68) began to be implemented. The increase was expected to lead to changes in working practices, but the analysis indicates that there are wider ramifications. The wide range of data collected in ELSA provides the opportunity to assess impacts on social and emotional processes as well as financial and employment patterns.

Amin-Smith and Crawford elegantly show how changes in the state pension age are related to changes in employment, with women being somewhat more likely to remain in the labour force for longer than they did before the changes were introduced. Nonetheless, it is estimated that the result of the changes is that household income has fallen on average for women aged 60–63 years, because the loss of pensions is only partly balanced by work and other benefit income. The importance of awareness of the changes in state pension age is also crucial. People’s knowledge of when they will reach state pension age has been assessed over several waves of ELSA, and the results indicate that a substantial proportion of women approaching retirement do not know precisely when they will reach state pension age. For such individuals, this could have a marked effect on retirement plans. Interestingly, Amin-Smith and Crawford argue that the effect of changes in state pension age on employment may not be driven just by economic factors, but more by providing a social and psychological benchmark about when one ‘ought’ to retire. As the state pension age is now increasing for both genders, it will be of value in the future to understand the impact on men as well as women.

Area, social inequality and well-being

One of the features of ELSA that has yet to be studied in detail is geographical location. The study sample is representative of the equivalent English population, not only in socio-economic terms, but also in relation to place. This means that it is possible to compare the experience of people living in rural areas (villages and hamlets) with those who live in urban areas and on the outskirts of larger conurbations. In Chapter 3, Matthews and colleagues provide one of the first detailed analyses of urban–rural living, along with area derivation and geographical location.

People in ELSA who live in villages and hamlets appear to be advantaged over their urban counterparts in terms of marital stability, wealth and work experience. They are also more engaged at the social and civic levels, and experience fewer depressive symptoms. At the same time, the proportion of people with no close contacts is higher among people living in less dense areas, and they have greater dependence on private means of transport. The chapter findings also endorse one of the core themes of ELSA, namely the corrosive effect of socio-economic deprivation. Here, poverty is assessed in terms of area characteristics, and it is found to be related to more separation and divorce, lower wealth and employment, less social engagement and prosocial behaviour, greater reliance on public transport, and an increased prevalence of depressive symptoms. The chapter also catalogues changes over time through the use of repeated assessments in ELSA. It is notable that moving house at older ages can have either beneficial or detrimental effects on well-being, depending on the characteristics of the area into which the person moves. The physical and social environments play a crucial role in determining well-being at older ages, and analyses of the type presented in Chapter 3 provide insights into the issues that might be susceptible to policy initiatives that will promote health and well-being at older ages.

Determinants and consequences of falls

Both medically and fiscally, falls are burdensome in older people. Falls are the most commonly occurring type of accident among older people, with injuries apparent in approximately one-fifth of cases. With study members reporting the occurrence of falls since the inception of ELSA, this cohort study is unusually well placed to explore both the consequences (prognosis) and prevention (aetiology).

In the most recent wave of data collection, 7% of men and 11% of women had experienced a severe fall. The consequences of these falls were profound: relative to study members who did not fall during follow-up, those who did experienced lower levels of mobility, physical activity and activities of daily living. Perhaps as a result of this loss of independence, falls had an unfavourable impact on the previously under-explored outcomes of well-being (higher depressive symptoms, lower quality of life) and loneliness. Surprisingly, only 25% of men and 23% of women reporting a fall stated that they received a follow-up from a health professional that matches National Institute for Health and Care Excellence (NICE) recommendations aimed at establishing the cause of the incident.

Importantly, numerous risk factors for falls were identified: chronic health conditions; not living with a partner; having depressive symptoms; loneliness; reporting having difficulties with activities of daily living and instrumental activities of daily living; problems with bladder incontinence. The fact that some of these predictors are malleable raises the possibility that, with supporting evidence from other observational studies, interventions could be implemented with the aim of lowering the risk of falls. In particular, there is growing evidence that physical activity programmes, most notably when implemented in group settings, protects against falls in older people. Also, interventions aimed at reducing levels of loneliness and social disconnection appear to produce enhancements in social, mental and physical functioning, though, to the best of our knowledge, the impact on falls risk has yet to be examined.

Methodology

The fieldwork, sample design, response proportions, content of the ELSA interviews and weighting strategies used in wave 8 are described in Chapter 5. A brief summary of the design is given here and in Table 1.1. The original ELSA sample was drawn from households whose head was a participant in the Health Survey for England (HSE) in the years 1998, 1999 and 2001. Conducted in 2002–03 (wave 1), individuals were eligible if they were born before 1 March 1952 (i.e., ages 50 years or above) and still living in a private residential address in England. In addition, we interviewed partners below the age of 50, and new partners who had moved into the household since the HSE. The participants who were recruited for the first wave of ELSA or have since become partners of such people are known as Cohort 1.

Wave 2 of ELSA took place in 2004–05, and the core members and their partners were eligible for interview provided they had not refused any further contact after the first interview. In the third wave, in an effort to address the problem of selection bias in longitudinal surveys due to study member attrition (for reasons of death, illness or lack of interest), we supplemented the original cohort with people born between 1 March 1952 and 1 March 1956 so that the ELSA sample would again cover ages 50 and above. The new recruits were sourced from the 2001–04 HSE years. Wave 4 took place in 2008–09 and the original cohort was supplemented with another refreshment sample of HSE respondents born between 1 March 1933 and 28 February 1958, taken from HSE 2006. The field work for wave 5 was carried out in 2010–11.

Data collection for wave 6 was conducted in 2012–13. In addition to the cohorts included in previous waves, we again added a refreshment sample of individuals born between 1 March 1956 and 28 February 1962. They had previously participated in the HSE in 2009, 2010 or 2011. Again, both core members and their partners were interviewed, but the analyses in this report are largely based on data provided by the core members only.

The study sample for wave 7 was also augmented by new participants to ensure that we had adequate representation of people aged 50–52. These volunteers had taken part in HSE 2011 and 2012 and were born between 1 March 1962 and 28 February 1964. There was no refreshment for wave 8, so the total sample was smaller than in previous waves.

We carried out a face-to-face interview and a self-completion assessment in all waves. In waves 2, 4, 6 and 8, research nurses visited the homes of study members in order to collect blood samples and to take physical measurements.

The broad topics that have been covered in every wave include household composition, employment and pension details, housing, income and wealth, self-reported doctor-diagnosed diseases and symptoms, tests of cognitive performance and of gait speed, health behaviours, social contacts and selected activities, and measures of quality of life. The new measures added in wave 8 will allow researchers and policy analysts to address a number of new issues.

Academic researchers, policy analysts and others interested in ageing research who are registered with the Economic and Social Data Service (ESDS) Archive can access the ELSA data sets, via the download service or via the online Nesstar software tool.

- ELSA data sets: www.esds.ac.uk/findingData/elsaTitles.asp
- ESDS Nesstar Catalogue: nesstar.esds.ac.uk/webview/index.jsp

Reporting conventions

The data collected during wave 8 feature in the present report, and the analyses in this report mostly use information from the core members of ELSA. The remaining data come from interviews with the partners of core members. Proxy interviews have been excluded, mainly because a much-reduced set of information is available for these people.

The cross-sectional analyses in the reference tables in Chapters E, S and H have been weighted for non-response so that estimates should reflect the situation among people aged 50 and above in England as a whole. The longitudinal analysis tables use longitudinal weights, as described in Chapter 5. Care should be taken when interpreting the nurse-collected biomarker data in wave 8, as the subsample assessed is not yet representative of ELSA as a whole.

Statistics in cells with between 30 and 49 observations are indicated by the use of square brackets. Statistics that would be based on fewer than 30 observations are omitted from the tables; the number eligible is given but a dash is placed in the cell where the statistic would otherwise be placed.

Future opportunities using ELSA data

The study is at the leading edge in both survey methodology and content, with new forms of data collection and new topics being introduced as the study progresses. The value of ELSA to research and policy increases as the longitudinal aspect is extended. Ultimately, however, the value of the study depends on its use by research and policy analysts, and their exploration of ELSA's rich multidisciplinary data set. For a list of publications and reports and other documentation concerning ELSA, please go to our web site: http://www.elsa-project.ac.uk/.

Acknowledgements

Data collection in ELSA would not take place without the efforts of a large number of people. Chaired by Professor Andrew Steptoe, the study is managed by a small committee, which comprises Professor James Banks, Professor David Batty, Professor Sir Richard Blundell, Professor Sir Michael Marmot, Professor James Nazroo, Dr Paola Zaninotto, Zoë Oldfield, Rowena Crawford, Dr Anni Oskala and Martin Wood. We are very grateful for the hard work and commitment of Dr Nina Rogers who resigned in early 2018 after several years of being study manager. She has been replaced as study manager by Kate Coughlin. We would also like to express our gratitude to Sheema Ahmed and Amber Simpson for their careful administrative work on the study. In the preparation of this report, particular thanks are due to Rachel Lumpkin for her fastidious copy-editing of the final manuscript and to Emma Hyman for her continued guidance during the different stages of report preparation.

We recognise and greatly appreciate the support we have received from a number of different sources. We are particularly indebted to those people who have given up their time and welcomed interviewers and nurses into their homes on so many occasions. We hope that our participants will continue to commit to ELSA in the future, helping us to understand further the dynamics in health, wealth and lifestyle of the ageing population. Another vital ingredient to the success of the study is the dedication of the more than 300 interviewers and nurses involved in collecting the data.

ELSA is coordinated by four main institutions: University College London (UCL), the Institute for Fiscal Studies (IFS), the University of Manchester and NatCen Social Research. There is also close collaboration with colleagues at the University of East Anglia who provide important input on health care issues. The ELSA research team has been guided by two separate groups. First is a group of leading national and international consultants who have provided specialist advice. We are very grateful to this group, which comprises Lisa Berkman (Harvard University), Axel Börsch-Supan (Munich Center for the Economics of Aging), Nicholas Christakis (Yale University), Hideki Hashimoto (University of Tokyo), Michael Hurd (RAND), Arie Kapteyn (University of Southern California), Hal Kendig (University of Sydney), Kenneth Langa (University of Michigan), Johan Mackenbach (University of Rotterdam), Marcus Richards (UCL), Kenneth Rockwood (Dalhousie University), Johannes Siegrist (University of Dusseldorf), James P. Smith (RAND), Robert Wallace (University of Iowa), David Weir (University of Michigan) and Robert Willis (University of Michigan). Second is the advisory group to the study, which is chaired by Baroness Sally Greengross. Members over this period have included Michael Bury, Richard Disney, Emily Grundy, Ruth Hancock, Sarah Harper, Tom Kirkwood, Carol Propper, Tom Ross, Jacqui Smith, Anthea Tinker, Christina Victor, Alan Walker and representatives of the UK government funding departments.

Finally, the study would not be possible without the support of funders to the study. Funding for all eight waves of ELSA has been provided by the US National Institute on Aging and several UK government departments. The departments that contributed to wave 8 included the Department of Health and Social Care, Department for Transport, and Department for Work and Pensions. The UK government funding has been coordinated during this period by the Economic and Social Research Council, and we are grateful for its role in the development of the study. Members of the UK government departments funding the study have provided helpful comments on drafts of this report, but the views expressed in this report are those of the authors and do not necessarily reflect those of these funding organisations.

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2. State pension age increases and the circumstances of older women

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The state pension age (SPA) – the earliest age at which someone in the UK can claim a state pension – has been rising in recent years. Between April 2010 and November 2018, the SPA for women has gradually increased from 60 to 65. In this chapter, we examine how the circumstances of women in their early 60s – in particular, their employment, incomes, activities, health and well-being – have been affected by this increase.

The key findings are the following.

- The increase in the SPA has led to a modest increase in employment among women at older ages, but many still retire at age 60. It is estimated that women who are below rather than above the SPA at ages 60–63 are 10 percentage points (ppt) more likely to be in paid work. This represents around a 25% increase in the proportion of women in paid work at these ages.

- The estimated association between the SPA and employment varies according to other characteristics of individuals, as follows.

    - Being below the SPA is only associated with an increase in employment when individuals correctly knew their SPA at around age 58. This could be explained by the fact that individuals who are ‘surprised’ by their SPA are unwilling or unable to deviate from their retirement plans. Alternatively (or additionally) it may be that individuals who make their retirement plans irrespective of their SPA do not bother to inform themselves of what their SPA is.
    - The positive association between being below the SPA and being employed is stronger when individuals were in employment at age 58. This could be because those in work at age 58 are more able to find or stay in work until later ages.
    - The positive association between being below the SPA and being employed is also stronger when individuals have private pensions (all else equal) – whether defined benefit or defined contribution – than when they do not, and when individuals have higher levels of financial wealth or are owner occupiers compared with when they are not.

- Together, these findings provide relatively little support for the idea that the effect of the SPA on employment is driven by credit constraints (i.e. a lack of financial resources meaning that individuals have to work in the absence of state pension income), and more support for the idea that the

SPA affects employment by providing some social signal about the ‘appropriate’ age to retire.

- Overall, being below the SPA at ages 60–63 is found to lead to a decrease in average equivalised total household income of £36 per week. This is caused by the decline in state pension income being only partly offset by an increase (on average) in other benefit income and income from paid work.

- There is little evidence that being below, rather than above, the SPA at ages 60–63 has an effect on many other aspects of time use, such as having a hobby, providing informal care, hours of television watched, or looking after grandchildren. However, there is a negative effect of being below the SPA on women’s cultural activities, and on the number of times they see friends each month. This could be driven by women having less time – due to the increased probability of being in employment – or by women having less income, or both.

- Being below rather than above the SPA at ages 60–63 appears to have little association with individuals’ loneliness, social isolation, depression, cognitive function or self-reported health. However, being below the SPA is associated with a 7 ppt reduction in the prevalence of moderate mobility problems. This may be indicative that staying in paid work is beneficial in terms of maintaining mobility.

2.1 Introduction

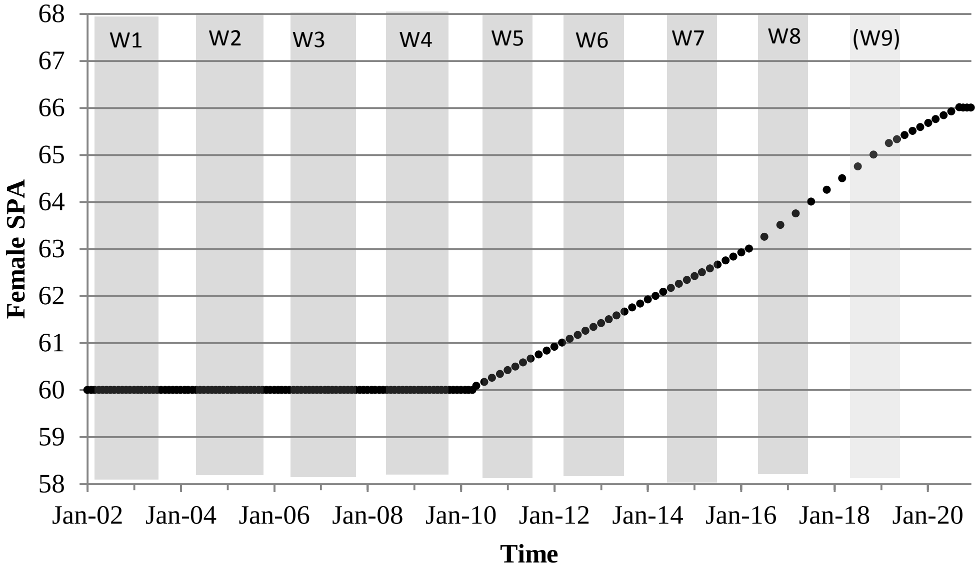
Around the world, people are living longer. In the UK, life expectancy at age 65 has increased by over a quarter during the last 30 years. A man currently aged 65 can now expect to live for another 21 years, and a woman for another 23 years (Office for National Statistics, 2017). While the rate of expected improvement has slowed, increases in life expectancy are forecast to continue into the future.

These improvements in longevity are to be celebrated. But one consequence is that many pension systems – state and private – have required reform in order to remain sustainable. With state pensions, governments have had to choose between paying for higher pension spending, reducing the level of pension benefits, or raising the age from which a state pension can be claimed. In the UK, a combination of all of these things has been implemented, with one of most important being increases in the SPA – the earliest age from which individuals are able to claim their state pension.

When the UK state pension was introduced in 1948, the SPA was 65 for men and 60 for women. In 1995, the government legislated that the SPA would increase for women from 60 to 65 between 2010 and 2020. In 2007, the government further legislated that the SPA for both men and women would increase in stages to 66, then to 67 and, ultimately, to 68 by 2046. Subsequent legislation, in 2011 and 2014, brought forward the increases to 65, 66 and 67. Future legislation is expected to bring forward the increase in the SPA to 68 and to introduce further increases in the SPA beyond that: the government has set in place a framework for moving to, and then maintaining, a situation where on average one-third of adult life is spent in receipt of the state pension.

The resulting female SPA that has prevailed in recent years (and is projected to be in place through to June 2020 under current legislation) is illustrated in Figure 2.1. The grey bars show how this overlaps with the ELSA fieldwork periods. For the first four waves of ELSA the female SPA was 60, but since then the SPA has been increasing. Over the course of the wave 8 fieldwork period, summer 2016 to summer 2017, the prevailing SPA was between 63 and 64 years.

Figure 2.1. Female SPA over time and interaction with ELSA fieldwork



The intention of these reforms to the SPA was not just that people would start receiving a state pension at a later age (which directly reduces the cost to the government of the state pension system), but also that some individuals would respond by remaining in paid work for longer (further strengthening the public finances, by generating additional tax revenues).

The increase in the SPA could affect women's labour supply choices through four main mechanisms. Most obviously, the state pension is no longer available for a period of time, and so individuals who do not have access to other financial resources (known as being credit constrained) will have to either work or claim out-of-work benefits. Second, lifetime wealth is reduced, because the number of years over which someone would receive a state pension falls. This would tend to increase individuals' labour supply. Third, the SPA may act as a signal as to the 'right' age at which to retire from paid work (even though receipt of the UK state pension is not conditional on not working). An increase in the SPA could therefore shift social norms around retirement ages. Finally, the increase in the SPA will have some effect on individuals' marginal incentives to work. On the one hand, changes to marginal tax rates (employee national insurance is no longer payable above the SPA) could mean reduced work incentives for those below the SPA as a result of the reform. On the other hand, changes to the accrual of benefit entitlement (accrual to the state pension ceases at the SPA) and changing eligibility to out-of-work benefits (those below the SPA are eligible for Jobseeker's Allowance/Employment and Support Allowance rather than Pension Credit, the latter of which is both more generous and comes with less conditionality) could mean increased work incentives for those below the SPA as a result of the reform.

Changes in the SPA could therefore affect labour supply decisions. It would also affect the level and composition of individuals' income – both directly (though the removal of state pension income) and indirectly through any changes to employment income and/or other benefit claiming. But there could be other consequences as well. For example, there might be implications for other time-use activities (such as caring or social participation), or for physical or mental health. These could arise as a consequence of changes in labour supply, or as a consequence of changes in income, or even as a result of the labelling effects of being 'a pensioner'.

Existing analysis of the effects of the increase in the SPA in the UK has focused on labour market behaviour and the income effects. Cribb, Emmerson and Tetlow (2016) found that the rise in the SPA from 60 to 62 between 2010 and 2014 increased employment rates among women by 6.3 ppt. Cribb and Emmerson (2018) found that the increase in the SPA from 60 to 63 reduced the net household income of women aged 60–62 by an average £32 per week, with an increase in earned income only partially offsetting the loss of state pension income. Given that labour market and income responses have been identified, this strengthens the interest in any direct or spillover effects on other aspects of individuals' circumstances or behaviour.

ELSA is well placed to help investigate the effects of the increase in the female SPA. The long-running nature of ELSA means that we have observations of women aged 60 and above who are above the SPA, and observations of women aged 63 and below who are below the SPA, depending on the wave in which they are interviewed (as illustrated in Figure 2.1). We can therefore compare the circumstances of women below the SPA with equivalently aged women who were above the SPA to help understand the effects of the SPA on behaviour and circumstances.

The main advantage of ELSA over other data sources is the breadth of information collected on individuals. We can examine the effects of the SPA increase not only on economic outcomes, such as employment and income, but also on other aspects of time use, on social participation, isolation and loneliness, and on different aspects of health. Furthermore, we can examine how the effects that the SPA change has on these outcomes vary across individuals according to their characteristics. Of particular interest is that ELSA has historically collected information on individuals' knowledge of their own SPA. This means that we can examine how responses to the increase in the SPA differ between those who were aware of the reform and those who were not.

This chapter proceeds as follows. We start in Section 2.2 by briefly describing some of the main characteristics and circumstances of women aged 60–62 in 2016–17 (who were below the SPA when observed, but who would not have been in the absence of the reforms). In Section 2.3, we compare these women's labour supply and income with equivalently aged women in 2008–09 (when the SPA was still 60), and more formally we estimate the effect of reaching the SPA on these economic outcomes. In Section 2.4, we consider whether, and how, the effect of the SPA on labour supply differs according to individuals' characteristics – in particular, their prior knowledge of their SPA, whether they are credit constrained, whether they have a private pension, their economic situation at age 58, and whether they report having hobbies. Then, in Section 2.5, we consider the effect of the SPA on other outcomes, including other aspects of time use, social participation and health. We conclude in Section 2.6.

2.2 Activities and circumstances of women aged 60–62 in 2016–17

To provide some context, in this section we start by briefly describing the characteristics of those women surveyed in ELSA wave 8 who were below the SPA but would, before 2010, have been above it. Because the ELSA fieldwork was carried out between May 2016 and June 2017 (inclusive), this means that all women aged 60, 61 or 62 at interview were below the SPA. Of those interviewed who were aged 63, some were above and some below the SPA, depending on their exact age and date of interview. For simplicity, Table 2.1 focuses on individuals aged 60–62.

The table shows that 70% of women aged 60–62 were married or cohabiting, with 16% separated or divorced and the rest evenly split between those who had been widowed and those who were single. Very few (5%) had two living parents, although just over one-third had at least one parent still alive. 82% of the women in this group had at least one child, and three in five also had at least one grandchild.

In terms of what these women were doing at the time of interview, half were in paid work, of whom almost two-thirds were working part-time.[1] The median income from employment among those working was £214 per week.

Table 2.1 also contains additional details on these women's education, caring responsibilities, pension membership, home ownership, and social lives.

2.3 Effects of the SPA increase on labour market activity and income

We now examine how these characteristics and behaviours differ between women affected by the SPA increases and women from previous generations who were not. We start in this section by focusing on their labour market activity and income.

[1] We define working part-time as working fewer than 35 hours per week.

Table 2.1. Demographic characteristics, wave 8

Wave 8, 60–62 year olds	**Female**	**Male**
Relationship status:		
Married or cohabiting	72%	76%
Separated or divorced	16%	11%
Widowed	6%	1%
Single	6%	12%
Age left education:		
At or before compulsory schooling age	28%	25%
Between compulsory schooling age and 18	46%	49%
19 or above	26%	25%
Have two living parents	5%	6%
Only mother is alive	25%	26%
Only father is alive	5%	7%
Have at least one child	82%	73%
Have at least one grandchild	62%	50%
Cared for someone >16 hrs in the past week	9%	7%
Cared for someone >35 hrs in the past week	6%	5%
Cared for a grandchild in the past week	7%	3%
In paid work	51%	66%
In full-time work	19%	48%
In part-time work	32%	16%
Employed	41%	47%
Self-employed	6%	15%
Mean employment income (pw)	£113	£199
Median employment income (for those >0)	£214	£346
Median equivalised total household income	£331	£374
Private pension member	75%	83%
Home owner	84%	85%
Does more than one cultural activity per month	53%	50%
Sees friends more than twice a month	44%	44%
N	417	342

Note: Full-time work is defined as working for 35 or more hours per week. Private pension membership includes both those drawing an income from a private pension and those who have a private pension (that they may, or may not, still be contributing to) from which they have yet to start claiming an income.

Comparing women aged 58–65 in 2016–17 and 2008–09

As described in the introduction, the SPA for women began to rise in April 2010. This means that women aged 60 or above in wave 4 of ELSA, who were interviewed between summer 2008 and summer 2009, were unaffected by the reforms – they reached their SPA upon turning 60. Thus, this group provides a natural comparator for women of similar ages in 2016–17.

As discussed, there are a number of reasons why we might expect to see differences in activities and circumstances between these two groups as a result of the changing SPA. However, we would also expect these groups to differ for other reasons. In particular, there may be ‘time effects’. The economic context in 2016–17 was somewhat different to that in 2008–09, and we might expect this to affect an individual’s labour market behaviour or income irrespective of any changes to the SPA. Furthermore, there may be generational differences between the two groups – known as ‘cohort effects’. Women born between 1945 and 1949 (and thus aged 60–62 when interviewed in 2008–09) may differ from women born some years later. For example, such women may have different life histories of labour market attachment, which could lead to different employment patterns between the two groups at older ages even in the absence of the changing SPA.

Given this, we examine not just how those aged 60–62 compare (on a number of dimensions) between 2008–09 and 2016–17, but also how those slightly older and those slightly younger compare over the same time period. These individuals will be subject to similar time and cohort effects as those aged 60–62, but their circumstances at the older/younger ages are likely to be less directly affected by the change in the SPA.[2]

Labour market activity

Figure 2.2 shows the proportion of women at each age 58–65 who were in paid work in 2008–09 and 2016–17. Age groups in both waves are colour-coded to reflect whether or not women of that age were above or below the state pension age at that time – those aged 63 in wave 8 are separately coloured because around half were above the SPA and half were below.

In 2008–09 employment at ages 58–59 was around 60%, but dropped noticeably for women aged 60 who were, at that time, above the SPA. Employment was successively lower at each older age, reaching 20% among those aged 65. The pattern in 2016–17 is somewhat different. The level of employment at ages 58–59 is around 10 ppt higher, which could reflect cohort differences. This difference could also reflect an anticipation effect – women aged 58–59 in 2016–17 may know that their SPA is 66 rather than 60, as would have been the case for women aged 58–59 in 2008–09, and may be responding to this negative lifetime wealth shock by working for longer, on average, than they otherwise would have. Interestingly, there is still a

[2] They may not be completely unaffected, however, as there may be anticipation effects among the younger group, who will be facing a higher SPA in 2016–17 than similarly aged individuals in 2008–09. Also, there may be lagged effects among the older group, as those observed in 2016–17 will have experienced a slightly higher SPA than those observed at the same age in 2008–09.

significant drop in employment at age 60, despite the fact that this is no longer the SPA. However, there is no gradual decline in employment with age after that point, as there was in 2008–09. Employment remains around 50% until one looks at those aged 63, around half of whom are above the SPA in 2016–17. There is significantly lower employment among this group than among those aged 62, and employment continues to decline with age thereafter. This suggests that the increase in the SPA is associated with some women remaining in the labour market for longer, though many still leave the labour market at age 60.

Figure 2.2. Percentage in paid work, by age

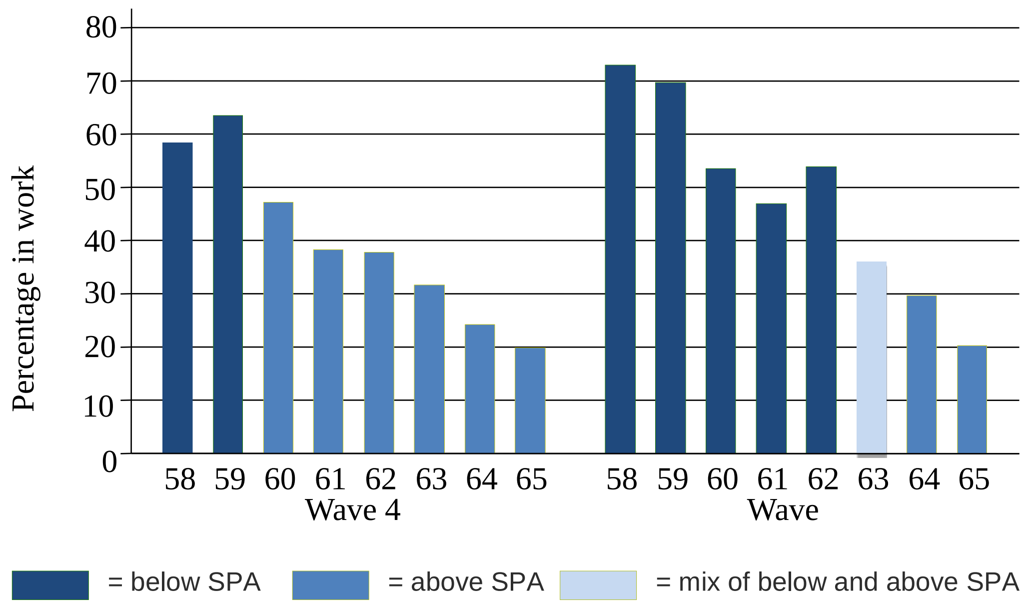


Figure 2.3 shows two graphs, breaking down Figure 2.2 into the proportion in full- and part-time work. The picture for full-time work shows that there was a large and sustained drop in the full-time employment rate at age 60 in 2008–09, which now coincides with the later SPA (63–64) in 2016–17. The picture for part-time work is slightly less clear cut, likely due to the complication of people transitioning from full- to part-time work before retiring fully, rather than just the retirement of those who had already been working part-time at older ages (see Scott, 2004). However, broadly speaking, part-time employment still seems to drop somewhat at age 60 in 2016–17, but is then sustained at a higher level until the next large drop at in employment rates at age 63.

Figure 2.4 examines the proportion of women reporting various responses to the general question about what best describes their current situation – in terms of being employed, self-employed, retired, unemployed, sick or disabled, or looking after the home or family. The proportion reporting themselves to be ‘retired’ clearly moves with the SPA: in 2008–09 this increased by 28 ppt between ages 59 and 60 and only 8 ppt between ages 62 and 63, while in 2016–17 this increased by only 6 ppt between ages 59 and 60 but 27% between ages 62 and 63. To a large extent, this is associated with the changes in labour market activity described above. However, it is also notable that there is a decline in the proportion of women reporting being sick or disabled that occurs at the SPA (i.e. at age 60 in 2008–09 and at age 63 in 2016–17). This is likely a labelling effect – that people report their out-of-work situation differently depending on which (if any) payments they are receiving from the state – rather than a reflection of any change in health or activities between 2008–09 and 2016–17.

Figure 2.3. Percentage in full- and part-time employment, by age

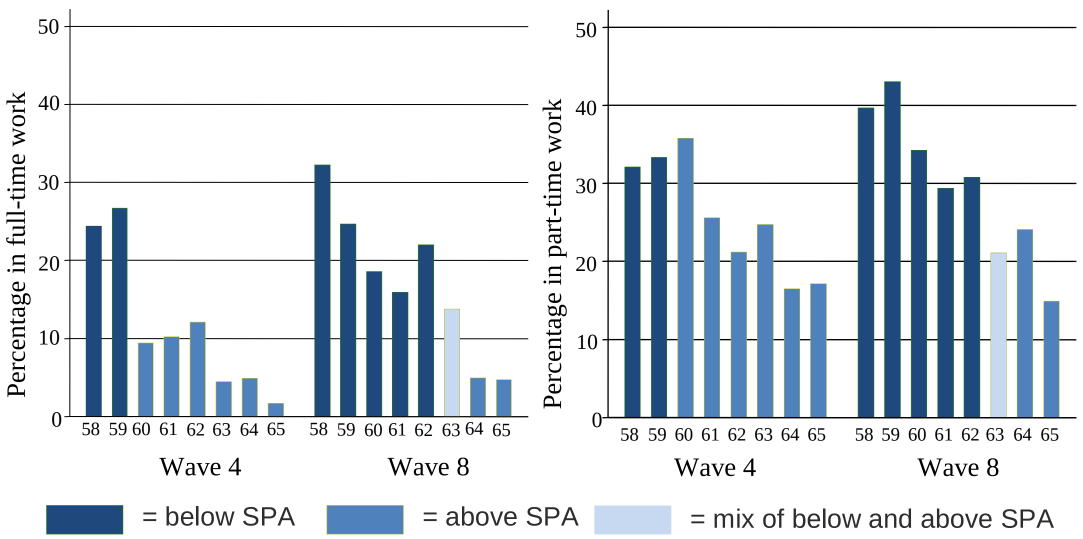
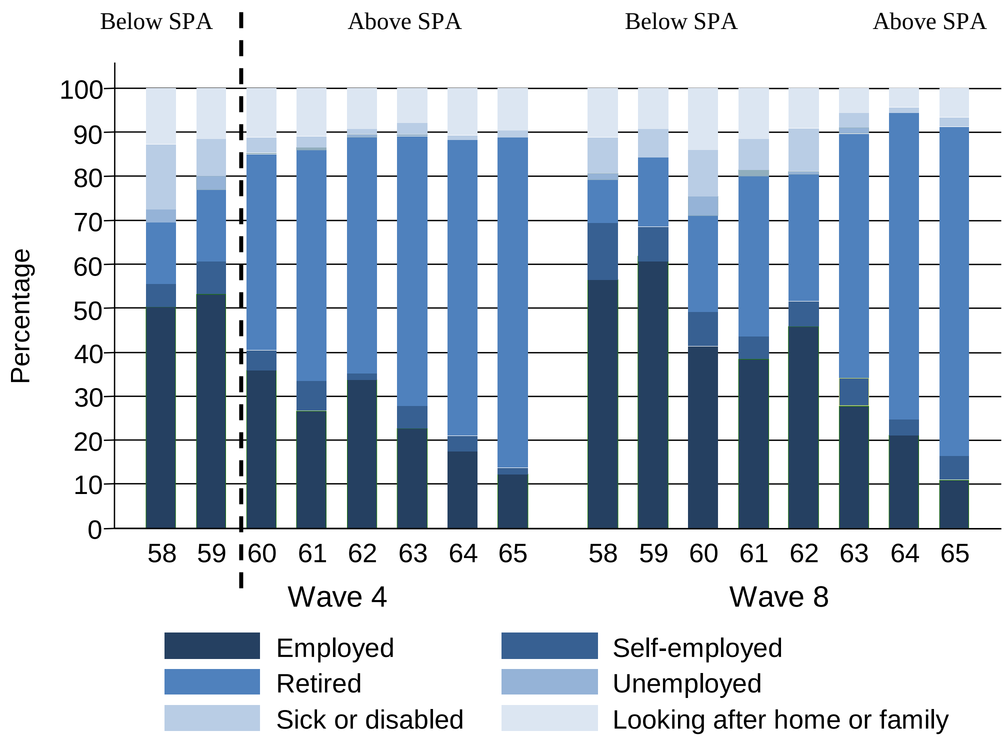


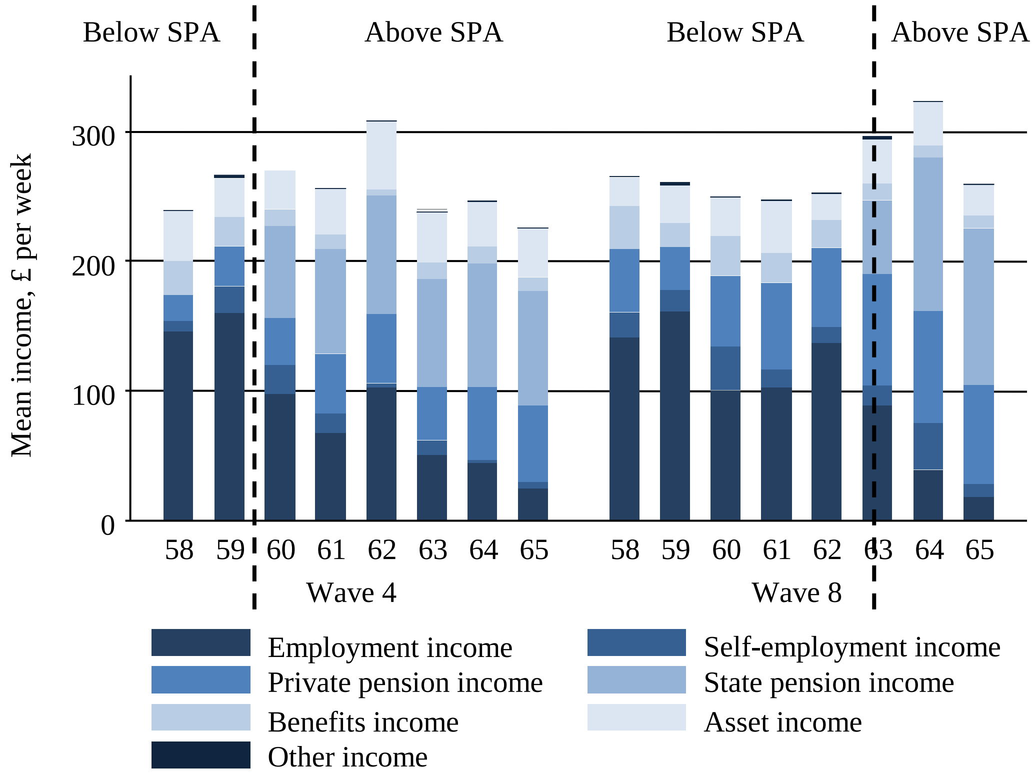
Figure 2.4. Self-reported situation, by age



Income

The patterns of activity among women in the two waves are reflected in the patterns of income. Figure 2.5 shows that mean employment income declines steadily once the SPA is passed. State pension income, of course, appears only at the SPA and older ages, and the average level of other benefit income also declines at that point as some benefit income is replaced by state pension payments. Both waves show mean private pension income increasing across age, and there are considerably higher levels of this component of income across all ages in 2016–17 than in 2008–09 (reflecting generational differences in private pension accumulation). Table 2A.1 in Appendix 2A describes the proportion of women of each age who report receiving each source of income in each wave. Interestingly, despite the small change in average private pension income, there is a noticeable increase in the proportion of individuals who report receiving a private pension income at age 60 compared with age 59 in wave 4. In wave 8, a jump in the prevalence of private pension income still appears at age 60, but there is also a noticeable increase in private pension receipt at age 63, suggesting that, for some individuals, claiming their private pension is associated with reaching the SPA.

Figure 2.5. Income, by age



Note: Mean incomes (from each component) are calculated across all women in each age group, not only those in receipt of the specific forms of income. Incomes scaled to 2015 prices, according to the Consumer Prices Index.

Exploiting data from all ELSA waves between 2008–09 and 2016–17

One downside to the descriptive approach in the previous section is that the sample sizes of women of a particular age are relatively small in any single wave of ELSA. This means that it can be difficult to distinguish genuine differences over time from natural sampling variation. However, the repeated nature of ELSA means that we have data on women at and around the SPA every two years between 2008–09 and 2016–17. We can therefore use these additional data, appropriately controlling for how the SPA moved over this period, to estimate more accurately differences between those above and below the SPA.

We do so using regression analysis, exploiting a difference-in-difference methodology, where the 'treatment' ($belowSPA_{it}$) is 'being below the SPA', and is administered to all women, but at different ages – meaning that we can compare similar aged women above and below the SPA. Our aim, then, is to estimate the difference between women aged 60–63 below and above the SPA in terms of some outcome whilst controlling (as best as possible) for time effects, birth cohort effects, and other individual characteristics. The approach conceptually reflects that shown graphically in the previous section, but allows us to quantify the effects of the increase in the SPA on different outcomes, distinguishing this from other underlying time effects or cohort effects.

The following specification is used:

$$Y_{it} = \beta_1 belowSPA_{it} + \sum_a \delta_a \cdot (age_{it} = a) + \gamma_t + \beta_2 C_i + \beta_3 X_{it} + \varepsilon_{it}. \quad (1)$$

Here, Y_{it} is the outcome of interest for individual i observed at time t, $belowSPA_{it}$ indicates an individual is observed below the SPA, age_{it} is a set of (annual) age dummies, γ_t is a set of dummies for the (calendar year and quarter) date of interview, C_i is a set of (cohort) dummies for the financial year of birth, and X_{it} is a set of individual characteristics. The additional characteristics that we control for include education, numeracy, home ownership, region, relationship status, and partner's age and education (for those with a partner).[3] These additional controls mean that our results are not affected by the changing composition of women over time along these dimensions.

By estimating this equation, we are able to identify the effect of being below the SPA on the outcome of interest, under the assumption that being below the SPA has the same effect at all ages between 60 and 63 (regardless of the distance of that age from the SPA). In addition, we must assume that any differences by age in the outcome Y_{it} are constant across time and cohort, that

[3] Specifically, we control for: whether an individual left education before or at the compulsory schooling age, beyond the compulsory schooling age and up to 18, or aged 19 or over; partner's education, in a similar way; individuals' numeracy (according to how many out of six numeracy questions an individual answered correctly {0–3, 4, 5, 6}; whether an individual is married/cohabiting/separated or divorced/widowed/single; partner's age and partner's age squared; whether or not individual is a home owner (includes shared ownership and those with a mortgage); which of nine English regions individual lives in.

any differences by cohort are constant across time and age, and that any differences by time are constant across cohort and age.

For continuous outcomes such as income, we estimate the above equation using ordinary least squares (OLS), clustering standard errors at the level of the individual (because ELSA is a panel data set and we are pooling observations across waves, some individuals will appear in the sample more than once). For binary outcomes such as whether or not someone is in employment, we estimate the equation using a probit model, again clustering standard errors at the level of the individual.

Results

We begin by looking at the effect on employment of women being below rather than above the SPA between the ages of 60 and 63. In four separate probit regressions, for which a summary of the results is shown in Table 2.2, we estimate the effect on the proportion of women in employment, the proportions in full- and part-time employment, and on the employment of the affected women's partners. The effects we find are similar in direction to both Cribb, Emmerson, and Tetlow (2016) and Cribb and Emmerson (2018), and of similar magnitude to the latter. In particular, we find that women aged 60–63 are 10 ppt more likely to be in employment when below the SPA than when above it. Put another way, the proportion of women in employment among those aged 60–63 and below the SPA is 10 ppt higher than it would be if they were above the SPA. This sizeable effect is statistically significant. A sense of the scale of this increase is provided by the fact that 50% of women aged 60–63 below the SPA in our sample in 2016–17 were in work (shown in the second column of Table 2.2). This means that our estimated effect implies a 25% increase in the number of these women in paid work.[4]

We also find an increase of 9 ppt in the proportion in full-time work and an increase of 4 ppt in the proportion in part-time work, both of which are statistically significant to the degree shown in Table 2.2.[5] The former implies a near doubling of the proportion of this age group in full-time work, as the proportion of women aged 60–62 in our sample in full-time work in 2016–17 was equal to 19%. We find no significant effect on the employment of the partners of the women affected.

The effect of being below the SPA on various sources of income is set out in Table 2.3. Unsurprisingly, given the findings described above, we find a statistically significant £30 increase in mean weekly self-employment and employment income from being below the SPA. If we were to assume that the only changes in self-employment and employment income arise from more individuals working than would otherwise have done so, this would suggest that the mean income from work among those moved to work as a result of the

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[4] Calculated as (50 – (50 – 10))/(50 – 10)*100 = 25, where 50 is the proportion of those aged 60–63 in employment in 2016–17, and (50 – 10) is the implied proportion of those aged 60–63 who would have been in employment in 2016–17 in the absence of the SPA increase, given the estimated effect size of 9.9.

[5] These increases are estimated in separate regressions and thus do not sum to the increase in employment overall.

increase in the SPA was equal to £283 a week[6] (compared with average earnings of around £265 among those aged 60–63 and below the SPA who would have worked at those ages irrespective of the change in the SPA, under the same assumption). However, it is also quite possible that some individuals who would have been working at ages 60–63 irrespective of the SPA increase do change how many hours they work (or the kind of work they do) which could affect their earned income.

Table 2.2 Effect on employment (in the past month) of being below the SPA

	Effect of being below the SPA (ppt)	Proportion among women aged 60–63 below SPA in 2016–17	Sample size
In paid work	10.1*** (2.1)	50%	7,601
In full-time paid work	8.7*** (2.1)	19%	7,390
In part-time paid work	4.4* (2.5)	31%	7,392
Partner in paid work	0.2 (2.4)	54%	5,519

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. All effects are obtained by estimating equation (1), with the set of controls described in footnote 3, using a probit model. Standard errors (in parentheses) are clustered at the level of the individual.

By contrast, the results presented in Table 2.2 do not show a significant change in the mean self-employment and employment income of affected women's partners. This is perhaps not surprising, given the lack of any significant effect on the employment of the affected women's partners, but it also suggests that there is no response, concerning hours or income, among working partners who did not change their labour market participation as a result of the SPA change.

Unsurprisingly, we see a mean decrease in weekly state pension income of £97.[7] We also find an increase in mean other benefits income of about £12 as a result of the reform. However, given the small number of people receiving benefit income (shown in Table 2.3), this reflects zero change for most individuals in the sample, and a much larger change in benefit income for those affected. In fact, the bottom row of Table 2.3 shows that being below, rather than above, the SPA at ages 60–63 is associated with a 6.4 ppt increase in the proportion of women receiving benefit income. This means that the increase in mean other benefits income is not simply being driven by women who would have been in receipt even when above the SPA receiving greater amounts, but also by an increase in the proportion of women doing so.

[6] This is calculated by carrying out a probit regression using the specification in equation (1) where the dependent variable is whether or not someone has non-zero income from employment or self-employment. We then divide the effect on self-employment and employment income (£28.39) from Table 2.3 by the marginal effect on employment probability calculated from this regression.

[7] For reference, the full basic state pension in 2015 was worth £116 per week.

We find little effect of being below the SPA on average private pension income. However, we do find that being below, rather than above, the SPA at ages 60–63 is associated with a 5.8 ppt smaller probability of having any private pension income. This suggests that more women have started drawing their private pensions later post-reform (possibly because they are working longer, or the normal retirement age for their schemes has increased) than have started drawing it earlier (to compensate for the absence of state pension income).

Table 2.3 Effect on various sources of income of being below the SPA

Source of income	Effect of being below the SPA	Proportion receiving income >0 among those aged 60–63 below SPA in 2016–17	Sample size
Self-employment and employment	29.75** (11.12)	51%	7,570
Partner's self-employment and employment	–5.90 (17.76)	40%	5,359
Private pension and other annuity	–5.99 (5.29)	49%	7,551
State pension	–96.55*** (2.13)	0%	7,551
Other benefits	11.51*** (2.47)	20%	7,551
Total household (equivalised)	–36.03** (18.14)	100%	7,380
Effect on proportion receiving non-zero income from:			
Private pension and other annuities	–5.8 ppt*** (1.9)	49%	7,535
Other benefits	6.4 ppt*** (2.1)	20%	7,540

Note: All sources of income are measured in real terms, deflated to 2015 prices using the Consumer Prices Index. ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. All effects are obtained by estimating equation (1) using OLS regression. Standard errors (in parentheses) are clustered at the level of the individual. Pre-reform proportions are estimated from ELSA wave 4 data, from 2008–09. We do not include all five income sources in the lower section of the table because the first two are taken into account by Table 2.2, and there is, by definition, no-one receiving state pension income when below the SPA.

Taking all income together, being below the SPA is found to have led to a decrease in mean equivalised total weekly household income of £36. This is in the context of mean household income of £405 among women aged 60–63 below the SPA in our sample in 2016–17. Thus, our estimate implies that there has been a 9% decrease as a result of the reform. On average, the fall in mean household income due to the loss of state pension payments is somewhat, but not fully, offset by increased employment income and other benefits income.

Our results are similar to those of Cribb and Emmerson (2018), estimated using different data. They find an increase in net earnings of £33 (comparable to our estimate of £30), and a decrease in total equivalised net income of £41 (comparable to our estimate of £36). They also find a decrease in state pension income of £95 (comparable to our estimate of £96) and an increase in other benefits income of £12 (as do we).[8]

2.4 How the effects of the SPA increase on employment vary across different groups

The results in the previous section found that the increase in the female SPA has led to an increase in employment among women in their early 60s of around 10 ppt. Many women, however, still choose to retire at age 60. An important question is: what is driving these responses? Which of the potential mechanisms discussed in Section 2.1 – credit constraints, reductions in lifetime wealth, changes in marginal financial incentives to work, or signalling effects – are playing a role? This is a difficult question to answer. However, an advantage of the ELSA data is the breadth of the information collected. This means that unlike with many other data sources, it is possible to use ELSA to examine how the effects of the increase in the SPA differed across groups with different characteristics. This is both interesting in its own right, and may help shed some light on the mechanisms at play.

Here we examine whether the effects on employment are different according to individuals' characteristics. In particular, we look at the following.

- **Previous knowledge of their SPA.** It is plausible that women's response to the SPA reform could depend partly on their *beliefs* about the point at which they will reach the SPA. For example, in the extreme case, women who only discover that their SPA has changed upon turning 60 (rather than anticipating it) will experience a shock to their income stream (and lifetime wealth) at this point. The effect of this on their labour supply response could go one of two ways. On the one hand, it might be more likely that there is an employment response among these women than among those who have factored in the effect on the timing of their income (and the level of their lifetime wealth) in advance. This is because the latter may have adjusted their behaviour more smoothly over time, while those who are shocked on reaching age 60 may have no alternative but to work longer. On the other hand, women who are not fully aware of their actual SPA may make plans for retirement based on incorrect expectations and may be unwilling to deviate from those plans upon becoming aware of their error.
- **Credit constraints.** The direct implication of the increase in the SPA is that income from the state pension cannot be received until the individual is older. The removal of this income source might be expected to have different implications for individuals who are credit constrained – in the sense that they have few other financial resources on which to draw to finance their spending in the intervening period – than for individuals who

[8] They also look at how incomes changed across the income distribution – finding that the increase in the SPA reduced net equivalised household incomes by a larger percentage among those towards the bottom of the income distribution than among those at the top.

are not. Individuals with no other financial resources would have to either work or claim other state benefits, while those with financial resources could choose to leave the labour market before the SPA and use other resources to fund their standard of living until they can claim the state pension.

- **Private pension membership**. Individuals with private pensions may be expected to respond differently to the increase in the SPA increase to those who do not. For those with a private pension, the negative shock to lifetime wealth and the flow of retirement income caused by the reform would be proportionately smaller. As a result, such individuals might be less responsive to the change in their SPA. Furthermore, for those with defined benefit pensions there will be a normal retirement age at which they will become eligible for unreduced pension payments. As well as providing a financial incentive to remain in paid work until this point (and not beyond if no further private pension is accrued), this could function as a signal of the appropriate age at which to retire. Both could mean significantly reduced responsiveness to the SPA.[9]
- **Economic situation at age 58.** We look at three separate aspects of an individual's economic situation at age 58: whether or not an individual was in work, whether or not an individual was in receipt of benefit income and, among those with non-zero earnings at 58, whether an individual's earnings were above or below the median. All three could reasonably imply different incentives to work in response to the increase in the SPA, and could also describe groups with quite different characteristics.

We examine whether the employment effects of the increase in the SPA are different according to individuals' characteristics by running a series of probit regressions, augmenting equation (1) each time with an interaction term between the treatment indicator ($underSPA_{it}$) and a grouping identifier for one of the above characteristics. We can then report the average marginal effect of being below the SPA on employment under both possible values for the grouping identifier, showing how the employment effect would be expected to differ between those with and without a particular characteristic if all else were equal.[10]

Knowledge of state pension age

Since 2006–07 (wave 3), the ELSA survey has asked women what they believe their SPA to be in years and months. As we also know the date of birth for each respondent, we are able to calculate each individual's actual SPA and

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[9] However, if the normal retirement age for some defined benefit pension schemes tracked the state pension age, this could reinforce the effects of the rising SPA for those with defined benefit pensions. However, this is unlikely to be the case for individuals in our sample, who reach the SPA too soon to be affected by some of the more recent reforms to public-sector defined benefit pensions, which have increased normal retirement ages.

[10] Due to the difficulty in assessing the significance of interaction effects in probit models, we also run the interacted regressions using OLS, and we assess significance from these. The interaction terms from the OLS models are shown in Tables 2A.2–2A.5 in Appendix 2A.

thus compare this with their beliefs. The stated beliefs we use in what follows are those reported in the wave in which the individual was closest to age 58.

Table 2.4 describes how self-reported SPAs vary according to actual SPAs among women observed aged 60–65 between 2008–09 and 2016–17 (inclusive).[11] It shows that among women reaching the SPA before 2010, and thus unaffected by the reform, the vast majority (77%) were aware that they would reach pensionable age at exactly 60, and only 6% did not know at all. However, among those whose actual SPA was somewhere between 60 and 64, 15% reported not knowing when it was and a further 16% believed incorrectly that it was at exactly 60. 59% of this group were aware that their SPA fell somewhere between 60 and 64 (but were not necessarily correct about the timing within that). Among those whose true SPA is between 65 and 66, only 41% were aware that it would fall somewhere within this bracket. 15% of this group believed their SPA to be at exactly 65 years of age, which may reflect the fact that the initial 1995 Pension Act planned for women's SPA to rise only to this level (this was revised by the 2011 Act).

Table 2.4. Self-reported SPA

Actual SPA (*N*)	**Self-reported SPA at age 58**							
	Don't know	Below 60	Exactly 60	60–64	Exactly 65	65–66	Exactly 67	Above 67
Exactly 60 (494)	6%	1%	77%	12%	4%	0%	0%	0%
60–64 (770)	15%	0%	16%	59%	7%	1%	0%	0%
65–66 (646)	16%	0%	4%	13%	15%	41%	8%	2%

Table 2.5 presents three more specific measures of women's beliefs about their SPA. In particular, we describe what proportion of women did not know their true SPA to within three months, six months, and twelve months, and the proportions overestimating and underestimating by more than three months.[12] The reason for constructing these measures is that the mechanisms described previously could have different effects on women depending on whether they overestimated or underestimated their SPA, and on how big the error is.

This table shows that around two-thirds of the women in our sample whose SPA has been increased by the reform did not know their true SPA to within three months when they were aged 58. The proportion who did not know their true SPA to within six months is slightly lower. The proportion who did not know their true SPA to within 12 months is significantly lower again –

[11] This is the sample of women used in the regression analysis presented in Sections 2.2 and 2.3, but each individual only appears once in Table 2.5 while they may be used multiple times in the regression analysis.

[12] Figure 2A.1 in Appendix 2A illustrates the fill distribution of errors in beliefs, according to women's actual SPA.

amounting to just under 40% of those whose SPA has been increased by the reforms.

Of these affected women who did not know their true SPA to within three months, the majority had underestimated when they would reach it, although a not insignificant proportion had overestimated (and a minority did not know at all – hence why the first and second columns do not sum to the third).

Table 2.5. Self-reported SPA, various measures of incorrect beliefs

Actual SPA (*N*)	**Underestimated by more than three months**	**Overestimated by more than three months**	**Didn't know to within three months**	**Didn't know to within six months**	**Didn't know to within twelve months**
Exactly 60 (494)	6%	11%	17%	16%	14%
60–64 (770)	40%	23%	66%	56%	41%
65–66 (646)	46%	18%	67%	62%	36%

Note: Included in the category of those who 'didn't know to within three/six/twelve months' are both those who reported 'Don't know' when asked their SPA, and those who reported a SPA that was incorrect by more than three/six/twelve months.

We turn now to whether the effects on employment of being below rather than above the SPA when aged 60–63 differ according to whether women were aware of the change in advance. The results reported in Table 2.6 illustrate the estimated average effect of being below the SPA on employment if everyone knew their SPA (first row) and if everyone did not know their SPA (second row), assuming all other individual characteristics are held constant. The difference between the rows therefore indicates how the employment effect of being below the SPA would be expected to differ due to individuals' degree of knowledge. The results suggest that if individuals were aware of their SPA, being below the SPA at a given age rather than above it would be associated with a 14–15 ppt increase in the probability of employment. In contrast, if individuals were not aware of their SPA (all else equal), then being below the SPA at a given age rather than above it would have little association with the probability of employment. For example, when 'not knowing' their SPA is defined as not knowing to within 12 months, being below the SPA rather than above is only associated with 2.4 ppt greater probability of employment, and that is not statistically significant from zero. In other words, being below the SPA at a given age is estimated to be significantly associated with an increase in employment only when individuals 'correctly' know their SPA.

We cannot identify the mechanism through which the SPA increase has a greater impact on employment when it does not come as a surprise (all else equal). However, there are at least two plausible 'stories' one could tell. First, it may be that those who had incorrect beliefs about their SPA may have made plans for their retirement and be unwilling or unable to deviate from them upon discovering their mistake – hence the smaller effect on employment –

while those who knew their true SPA in advance may have made their plans for retirement accordingly and thus be more likely to continue in paid work beyond age 60. Alternatively, it could be that some women make their retirement plans irrespective of their SPA, and having made their plans do not bother to find out their SPA as it does not affect their decisions or behaviour. This could also drive an association between levels of knowledge and a lack of responsiveness of employment to the SPA.

Table 2.6. Heterogeneity of effects of being below the SPA, by knowledge of SPA

Probit: effect on likelihood of being in work:	Knows/doesn't know to within three months	Knows/doesn't know to within six months	Knows/doesn't know to within 12 months
Average marginal effect (knows SPA)	14.9ppt*** (3.2)	15.2ppt*** (3.1)	14.2ppt*** (2.9)
Average marginal effect (doesn't know SPA)	6.2ppt** (3.0)	4.2ppt (3.2)	2.4ppt (3.5)
Sample size	7,366	7,366	7,366

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. Standard errors (in parentheses) are clustered at the level of the individual.

Credit constraints

The increase in the SPA might be expected to have different implications for individuals who are credit constrained – in the sense that they have few other financial resources on which to draw – than for individuals who are not. There is no simple definition of who is credit constrained, however. We test three possible separate measures of whether an individual is credit constrained:

- having net household financial wealth of less than £2000 (which is true for 25% of our sample);
- having net household financial wealth of less than £8000, which is approximately equal to one year's worth of the full new state pension (true for 37% of the sample);
- not being a home owner (which applies to 18% of the sample).

Table 2.7 illustrates the estimated average effect of being below the SPA on employment if everyone was credit constrained (first row) and if everyone was not credit constrained (second row), assuming all other individual characteristics are held constant. The different columns present results for our three alternative measures of being credit constrained. The difference between the rows indicates how the employment effect of being below the SPA would be expected to differ due to whether someone was credit constrained if all else were equal. Perhaps surprisingly, the results suggest a larger positive employment response to being below the SPA when individuals are not credit constrained than when they are.[13]

This somewhat counterintuitive result may be caused by our measures of credit constraints correlating with other factors that could relate to how easy individuals find it to stay in the work force at older ages, or the flexibilities they are offered in order to do so. These arguments are discussed in more detail below when we examine whether the effect of the SPA on employment differs according to individuals' incomes at 58.

Table 2.7. Heterogeneity of effects, by measures of credit constraints

Probit: effect of being below the SPA on employment	<£2000 net financial wealth	<£8000 net financial wealth	Doesn't own home
Average marginal effect (credit constrained)	6.2ppt* (3.7)	7.7ppt** (3.3)	4.1ppt (4.9)
Average marginal effect (not credit constrained)	11.8ppt*** (2.7)	12.0ppt*** (2.8)	12.0ppt*** (2.6)
Sample size	7,385	7,385	7,566

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. Standard errors (in parentheses) are clustered at the level of the individual.

However, it is also worth noting that the differences in employment effects according to individuals' prior knowledge of their SPA, discussed in the previous section, do not provide much support for the credit constraints mechanism playing a major role in driving the behaviour either. If part of the explanation for why women were moved to work as a result of the increase in their SPA was due to their being credit constrained, we might expect those who did not know their true SPA to be more likely to be moved to work than those who did. Those unaware of the SPA increases would have been less likely to save in advance to cover the period during which they would no longer be receiving the state pension, and thus may have been more likely to be credit constrained. However, as discussed, we actually find that those who did not know their true SPA were *less* likely to be moved to work by the increase in the SPA than those who did.

Private pension membership

Table 2.8 sets out the results for whether the estimated effect of being below the SPA on employment differs according to whether someone has a private pension or not (all else equal). The first column of Table 2.8 contains results from allowing the effect to differ according to whether an individual is a member of any private pension scheme, while the latter two columns look specifically at whether the effect differs according to whether someone has a defined benefit or a defined contribution private pension.

[13] Results from the OLS specification are presented in Table 2A.3 in Appendix 2A, and similarly show that a statistically significantly greater positive employment effect of being below the SPA is estimated to be associated with not being credit constrained.

We estimate a larger effect on employment from being below the SPA when individuals have a private pension than when they do not (all else equal). This is perhaps contrary to expectations, given that those with private pensions are less likely to be credit constrained and those with defined benefit pensions might be sensitive to the signal to retire provided by their scheme's normal retirement age (and therefore less sensitive to the signal to retire provide by the SPA). However, we must be cautious in interpreting this result, as there are likely to be other differences between those with and without private pensions – such as wage levels – that we have not controlled for, and that might have affected their employment response to being below the SPA.

Table 2.8. Heterogeneity of effects, by pension membership

Probit: effect of being below the SPA on employment	**Private pension member = 1 (not = 0)**	**Has a DB pension = 1 (not = 0)**	**Has a DC pension = 1 (not = 0)**
Average marginal effect (characteristic variable = 1)	15.9ppt*** (2.8)	16.9ppt*** (3.2)	16.0ppt*** (3.4)
Average marginal effect (characteristic variable = 0)	–1.1ppt (3.3)	6.2ppt** (2.8)	6.7ppt** (2.7)
Sample size	7,587	7,587	7,587

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. Standard errors (in parentheses) are clustered at the level of the individual.

Economic situation at age 58

Finally, we examine whether the effect of being below the SPA on employment differs according to whether or not an individual was employed at age 58, whether or not an individual was receiving benefit income at age 58, and, among those with positive earnings at age 58, whether an individual was above or below median earnings for their cohort at age 58 (in each case holding all other characteristics constant). Results are shown in Table 2.9.

We find that being in paid work at age 58 is associated with a larger increase in employment above age 60 as a result of the increase in the SPA (compared with not being in paid work at 58). This could be because those who were in work at 58 were more able to find or stay in work until they chose to retire. In similar analyses of responses to state pension reforms in Austria, Staubli and Zweimuller (2013) show that increasing the SPA leads to more of those employed one year in advance of reaching retirement age staying in work, but it does not significantly increase the likelihood of those unemployed one year in advance moving into work. The estimated average effect of being below the SPA on employment if everyone was not in work at age 58 is actually found to be negative – implying that individuals are less likely to be in work between the ages of 60–63 as a result of being below the SPA if they were not in work at age 58. This result is difficult to explain, although it could relate to cohort differences in the reasons for being out of paid work at 58. For example, for those with earlier SPAs the cause of being out of paid work at 58 could be more likely to be related to a deliberate choice in anticipation of retirement, whilst for those with later SPAs being out of paid work at 58 might be more likely to be indicative of difficulty finding work.

We also estimate that the effect on the employment of those who were in receipt of benefits would be significantly smaller than on those who were not. Of those in receipt at age 58, a third were receiving benefit income from the Disability Living Allowance, the main working-age benefit paid to disabled people who are deemed to face additional costs of living, and 25% were receiving incapacity benefit (which is intended to help those whose disability means they are unable to work). It is perhaps unsurprising that we estimate a smaller employment response to the changing SPA among women in these circumstances.

Table 2.9. Heterogeneity of effects, by circumstances at age 58

Probit: effect of being below the SPA on employment	**In work at 58 = 1 (not = 0)**	**Benefit income >0 at 58 = 1 (not = 0)**	**Income at 58 > median = 1 (not = 0)**
Average marginal effect (characteristic variable = 1)	14.1ppt*** (2.4)	–0.5ppt (3.5)	12.9ppt*** (2.6)
Average marginal effect (characteristic variable = 0)	–14.9ppt*** (3.3)	12.1ppt*** (2.6)	8.8ppt*** (2.9)
Sample size	7,587	7,545	5,185

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% level respectively. Standard errors are clustered at the level of the individual.

Whilst the final column of Table 2.9 shows that, among those with non-zero earnings at age 58, having earnings above the median is associated with a greater impact of the SPA on employment than having earnings below the median, this difference is not statistically significant when estimated using an linear probability model regression specification.[14]

2.5 Effects of the SPA increase on other activities, health and well-being

The increase in the SPA was expected to affect labour market behaviour and incomes, and the previous section shows that indeed this has been the case. But we might also expect the reform to lead to differences in women's other activities and wider circumstances, such as their health and well-being. These differences could arise as a result of changes in labour market activity – which affect the amount of time available for other activities, and could directly affect health and well-being (negatively or positively) – or as a result of changes in income, or even as a result of the labelling effects of identifying as 'a pensioner'.

[14] Results are reported in Table 2A.5 in Appendix 2A.

Table 2.10. Effect of being below the SPA on time use, cultural activities, social isolation and loneliness, and health

	Effect of being below the SPA	Mean(/proportion) among women aged 60–63 below SPA in 2016–17	Sample size
Been on a holiday in the past year[a]	–2.5ppt (2.9)	73%	4,095
Has a hobby or pastime[a]	–3.0ppt (2.5)	74%	6,791
Hours of TV watched per day[b,c]	–0.41 (0.40)	6.0 hours	4,271
Provided any informal care in the past week[a]	0.0ppt (2.1)	26%	7,574
Provided >35 hours of informal care in the past week[a]	0.8ppt (1.2)	6%	7,531
Provided informal care for a grandchild in the past week[a]	0.2ppt (1.1)	6%	7,471
Cultural activities[b]	–0.08** (0.04)	0.73	7,590
Meetings with friends per month[b]	–0.42** (0.21)	3.9	6,996
Social isolation index[b]	0.06 (0.06)	1.3	4,847
Loneliness index[b]	–0.01 (0.04)	0.28	6,830
‘Yes’ to >= 3 questions indicating depression[a]	–0.1ppt (2.2)	24%	7,468
Quality of life score (CASP-19) [b]	–0.08 (0.47)	42	6,580
Verbal fluency[b]	0.27 (0.17)	6.1	5,913
Memory: immediate[b]	0.01 (0.08)	6.7	7,458
Memory: delayed[b]	0.12 (0.09)	5.6	7,465
Self-reported health[b]	–0.01 (0.05)	2.7	7,466
Any severe mobility problems[a]	0.1ppt (2.3)	38%	7,590
Any moderate mobility problems[a]	–6.6ppt** (2.4)	43%	7,587

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. Standard errors (in parentheses) are clustered at the level of the individual. Substantially smaller sample sizes are where the outcome in question is taken from the self-completion section of the ELSA survey.

[a] Effects are obtained by estimating equation (1) using a probit model.

[b] Effects are obtained by estimating equation (1) using an OLS model.

[c] Question not asked in waves 7 or 8, so the sample does not include any observations from 2014–15 or 2016–17. Accordingly, the ‘Mean among women aged 60–63 below SPA in 2016–17’ figure of 6.0 hours refers to the mean among a similarly defined group in 2012–13.

Because ELSA is such a broad study, it provides information on a vast range of individuals' wider circumstances that we can examine: time use, cultural activities, social participation, health, social isolation, and loneliness. In this section, we explore the effect of the increase in the SPA on many of these circumstances using the same differences-in-difference regression methodology presented in Section 2.3. The results are summarised in Table 2.10 and are discussed below.

Time use

The indicators of time use we consider are:

- whether has been on holiday in the last year;
- whether has a hobby or pastime;
- the number of hours of television watched per day;
- whether provided any informal care in the past week;
- whether provided 35 or more hours of informal care in the past week;
- whether looked after grandchildren in the past week.

Perhaps surprisingly, given the increase in employment found above (which leaves less time to pursue other activities), we do not find any statistically significant effects on these indicators of time use. However, if different individuals trade off the time spent on employment with different other activities, the effect on other activities would be more dispersed and therefore harder to pick up. It may also be the case that time use is affected in ways not captured by these relatively coarse measures. For example, the hours spent on hobby or pastime may be affected by the change in the SPA, but not whether an individual reports having a hobby or pastime at all.

Cultural activities

We constructed a score of cultural activity by assigning each individual a score between 0 and 4 according to how many of the following they do at least once a month: go to a concert, the theatre or the opera; go to the cinema; go to a museum or gallery; or eat out. We find a statistically significant fall in women's cultural activity score as a result of being below the SPA (by 0.08 on our four-point scale, which is equivalent to one woman in eleven doing one fewer activity per month and it is an 11% fall relative to the baseline level). This could plausibly be explained both by women having less time, due to the increased probability of being in paid work, and having, on average, less income.

Social isolation and loneliness

We examine two related but distinct measures: social isolation and loneliness. The two differ in that social isolation is normally defined as an objective measure, referring to the number of social contacts or interactions, whilst 'loneliness' is used to describe a negative emotional state. Specifically, we consider the following.

- The number of times they see friends in a month.

- An index of social isolation constructed as a five-point scale,[15] with an individual scoring a point for matching each one of the following:
  - being single;
  - having lack of regular contact with children (less than once a month);
  - having lack of regular contact with friends;
  - having lack of regular contact with family;
  - not being a member of a church/club/society or other organisation.
- How many of the following questions concerning loneliness respondent answers 'often' to:[16]
  - how often they felt they lack companionship;
  - how often they felt left out;
  - how often they felt isolated from others;
  - how often they felt lonely.

We find a statistically significant fall in the number of times women see friends each month as a result of being below the SPA (by 0.4 times per month, which is equivalent to almost one woman in two reporting seeing their friends one fewer time a month and is a 10% reduction in the number of meetings relative to the baseline level). However, when looking at the impact of being below the SPA on our measures of social isolation or loneliness, we find no significant effect.

This suggests that the increase in time spent working induced by the reform does crowd out meeting friends, but that this does not adversely affect how isolated or lonely someone feels. This could be either because a sufficient number of these interactions still occur, or because by staying in work women have more regular contact with colleagues, which reduces the risk of isolation and loneliness.

Health

ELSA contains a vast array of objective and subjective measures of health. The small subset we examine includes the following.

- Depression: whether or not someone answers 'yes' to three or more symptoms of depression from the CES-D scale.
- Quality of life: CASP-19 score, constructed over 19 questions addressing experiences of later life along the dimensions of control, autonomy, self-realisation and pleasure.[17]
- Self-reported health: answers on a five-point scale where 1 is poor and 5 is excellent (poor/fair/good/very good/excellent).
- Mobility: whether or not someone reports any severe mobility problems.
- Mobility: whether or not someone reports any moderate mobility problems.

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[15] This follows the measure used in much of the literature on social isolation (e.g. Steptoe et al., 2013).

[16] The four questions ask: how often respondent feels [they lack companionship/left out/isolated from others/lonely].

[17] A full list of questions and how answers are scored can be found at https://casp19.com/casp-scoring-and-properties/.

- Verbal fluency: number of animals named in one minute (percentiles according to the distribution of scores among women aged 56–63 in 2004–05, wave 2).
- Verbal recall: two word recall test (immediate and delayed) scored 0 to 10.

We find no statistically significant effects on depression. Of course, it is possible that this could be due to multiple effects working in opposite directions. For example, on the one hand, staying in work might improve mental health if it contributes to a sense of purpose but, on the other hand, the potential ‘shock’ of finding out that one is not eligible for the state pension at 60 could have a negative effect. We also find no statistically significant effect on quality of life, as measured by CASP-19 score. Similar considerations could apply.

Table 2.10 also contains the results of regressions looking at verbal fluency and verbal memory. We find no statistically significant effect on either.

We do find a statistically significant 7 ppt reduction in the prevalence of moderate mobility problems (compared with a pre-reform prevalence of 52%). This could suggest that the impetus to keep active provided by staying in paid work helps to reduce moderate mobility problems. In contrast, we find no significant effect on the prevalence of *severe* mobility problems, which would be consistent with these problems being more fundamental health issues and less easily avoided by small behavioural changes. We also find no significant effect of being below the SPA on women’s self-reported health.

2.6 Conclusions

The increase in the SPA is one of the most important public policy reforms affecting older individuals in recent years. While, so far, only women have been directly affected (in the sense that they have reached ages where they can no longer receive the state pension), in future the SPA will rise similarly for men and women. Understanding how individuals are affected by, and are responding to, these increases is of significant importance.

This chapter has used data from both the latest and previous waves of ELSA to show that the rising SPA for women has led to some effects on behaviour and circumstances. In particular, in line with previous studies, we have identified increases in the employment rate among women aged 60–63 who would – pre-reform – have been above the SPA. Unsurprisingly, this rise in employment has meant a concurrent rise in average employment income. Overall, however, there has been a negative net effect on average household incomes; the increase in average self-employment and employment income and other benefits income has not fully offset the loss of state pension income for these women.

The advantage of ELSA data is the breadth of information collected on individuals, allowing us to look beyond employment and income and at other indicators of individuals’ circumstances. Interestingly, despite finding an effect on employment, we find no statistically significant effect of being below the SPA on most of the indicators of time use we examine. There are two notable exceptions: women aged between 60 and 63, who would have been above the SPA in the absence of reform, do fewer cultural activities and see their friends less often as a result of being below the SPA. This could be driven by women having less time – due to the increased probability of being in employment – or by women having less income, or both.

In terms of health, we find that the reform has little impact on self-reported health, depression, quality of life or cognitive function. However, we do find that being below the SPA has had the effect of reducing the proportion of women with moderate mobility problems. This could suggest that being in paid work helps individuals to remain active and reduces the onset of mobility issues. Understanding more about the relationship between paid work and health is an active ongoing area of research.

We also examined how the effect of being below the SPA on employment is estimated to differ across individuals with different characteristics. We found that being below the SPA is only associated with an increase in employment when individuals correctly knew their SPA at around age 58. Further research is required to understand the mechanisms at play here. However, this could indicate that those for whom the increase in their SPA was a shock are unwilling (or unable) to deviate from the retirement plans they have made. Alternatively, it could indicate that some individuals make plans for their retirement irrespective of their SPA and, consequently, do not need to be aware of what their SPA is.

Although it might be expected that those facing credit constraints would be more likely to need to stay in work as a result of being below rather than above the SPA, we estimate that the employment rate of those less likely to be credit constrained responds more strongly to the rising SPA than those less likely to be credit constrained (all else equal). The positive association of being below the SPA and employment is also stronger when individuals have private pensions (all else equal) – whether defined benefit or defined contribution – than when they do not.

Taken together, these findings provide relatively little support for the effect of the SPA on employment being driven by credit constraints, and provide more support for the idea that the SPA affects employment by providing some social signal about the ‘appropriate’ age to retire. However, further research is required to really understand the mechanisms through which the SPA affects employment decisions, and for whom. Further analysis of heterogeneity in effects across different types of individuals will be important (and will become more powerful as future waves of ELSA are available) given the likelihood, as discussed in the recent independent Cridland Review of the SPA (Department for Work and Pensions, 2017), that differential impacts of the SPA increases are likely to operate along the margins of other inequalities, both economic and health-related.[18]

[18] Financial support for the analysis in this chapter was gratefully received from the Economic and Social Research Council through the ‘Policies for longer working lives: understanding interactions with health and care responsibilities’ project (grant number ES/P001688/1), which is part of the Joint Programme Initiative ‘More Years, Better Lives’.

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Appendix 2A

Table 2A.1. Percentage of women receiving income from each source

Age	Employment income	Self-employment income	Private pension income	State pension income	Other benefit income	Asset income	Other income
Wave 4							
58	52%	4%	17%	0%	25%	80%	0%
59	57%	7%	22%	0%	21%	76%	2%
60	42%	7%	38%	70%	17%	78%	2%
61	32%	5%	45%	83%	15%	83%	1%
62	38%	2%	49%	87%	12%	86%	2%
63	27%	4%	46%	87%	18%	85%	0%
64	24%	2%	49%	93%	18%	85%	1%
65	16%	3%	56%	96%	14%	86%	1%
Wave 8							
58	65%	5%	22%	0%	25%	62%	2%
59	69%	5%	23%	0%	22%	59%	4%
60	46%	11%	46%	1%	27%	73%	2%
61	42%	7%	51%	0%	19%	69%	3%
62	47%	8%	45%	1%	19%	74%	3%
63	33%	7%	59%	42%	16%	77%	2%
64	25%	6%	59%	90%	13%	70%	1%
65	16%	7%	63%	93%	11%	67%	1%

Table 2A.2. Linear probability model: heterogeneity of effects of being below the SPA, by knowledge of SPA

	Interacted variable		
	Knows(=0)/doesn't know(=1) to within three months	Knows(=0)/doesn't know(=1) to within six months	Knows(=0)/doesn't know(=1) to within twelve months
Interaction term	–8.3ppt** (3.5)	–10.5ppt*** (3.6)	–11.3ppt*** (3.8)
Sample size	7,369	7,369	7,369

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. Standard errors (in parentheses) are clustered at the level of the individual. The table shows the coefficient on the interaction term when the regression specification in Section 2.4 is estimated by OLS. The coefficient can thus be interpreted as the difference in the effect of being below the SPA between those for whom the interacted variable is equal to 1 and those for whom it is equal to zero. Thus, in this example, those who did not know their SPA to within three months were 8.3 ppt less likely to have been moved to work by being below the SPA than those who did know their SPA.

Table 2A.3. Linear probability model: heterogeneity of effects, by measures of credit constraints

Effect of being below the SPA on employment	<£2000 net financial wealth = 1	<£8000 net financial wealth = 1	Doesn't own home = 1
Interaction term	–6.9ppt** (3.4)	–5.2ppt* (3.2)	–9.7ppt** (4.6)
Sample size	7,388	7,388	7,569

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. Standard errors (in parentheses) are clustered at the level of the individual. The table shows the coefficient on the interaction term when the regression specification in Section 2.4 is estimated by OLS. See Table 2A.2 for interpretation of the 'interaction term'.

Table 2A.4. Linear probability model: heterogeneity of effects, by pension membership

Effect of being below the SPA on employment	Private pension member = 1 (not = 0)	Has a defined benefit pension = 1 (not = 0)	Has a defined contribution pension = 1 (not = 0)
Interaction term	18.7ppt*** (3.2)	10.9ppt*** (3.2)	9.6ppt*** (3.3)
Sample size	7,590	7,590	7,590

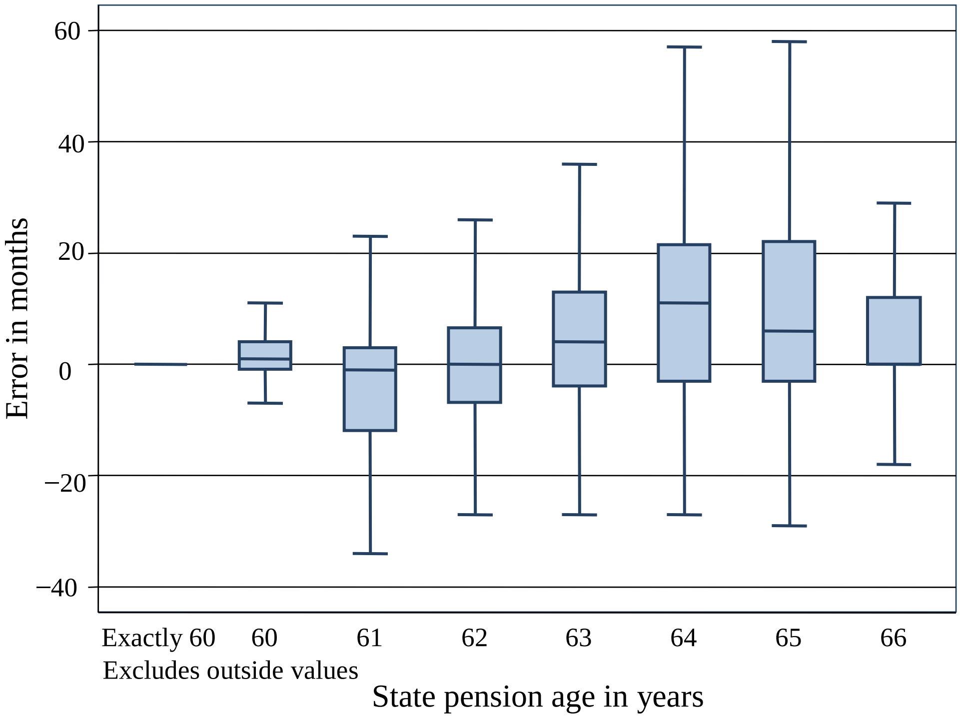
Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% level respectively. Standard errors (in parentheses) are clustered at the level of the individual. The table shows the coefficient on the interaction term when the regression specification in Section 2.4 is estimated by OLS. See Table 2A.2 for interpretation of the 'interaction term'.

Table 2A.5. Linear probability model: heterogeneity of effects, by circumstances at age 58

Effect of being below the SPA on employment	In work at 58 = 1 (not = 0)	Benefit income >0 at 58 = 1 (not = 0)	Income at 58 > median = 1 (not = 0)
Interaction term	41.9ppt*** (2.3)	–19.2ppt*** (3.4)	–0.9ppt (3.5)
Sample size	7,590	7,548	5,251

Note: ***, ** and * denote that the effect is significantly different from zero at the 1%, 5% and 10% levels, respectively. Standard errors (in parentheses) are clustered at the level of the individual. The table shows the coefficient on the interaction term when the regression specification is estimated by OLS. See Table 2A.2 for interpretation of the 'interaction term'.

Figure 2A.1. Distribution of error in beliefs about own SPA



Note: Error is the difference between an individual's self-reported SPA and their actual SPA. Individuals are grouped according to whether their actual SPA is: exactly 60, 60 < SPA < 61, or such that 61 ≤ SPA < 62, etc. The boxes show the range covered by the middle 50% of the sample within each group (i.e. the bottom of the box is the 25th percentile, the dividing line in the middle indicates the median and the top of the box is the 75th percentile) while the tails show the 90th and 10th percentiles.

3. Area and its relation to social inequality and well-being in later life

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The descriptive analysis in this chapter shows the following.

- Older people living in less deprived and more rural areas in 2016–17 report better social and well-being outcomes than those in more deprived and urban areas.
- As both area-level deprivation increases and as areas become more urban, levels of social and civic engagement, volunteering and cultural engagement steadily decrease.
- Older people living in more deprived and urban areas in 2016–17 are much more likely to work in poor quality employment than those in less deprived and rural areas.
- Public transport is used less in rural areas than in urban areas in 2016–17, but almost all older people living in rural areas have access to a car when needed, while this proportion is lower among those living in urban areas.
- Areas that are rural and less deprived have higher proportions of older people who are married, while areas that are urban and the most deprived have the highest proportions of people who are divorced or separated.
- There is a north–south divide among older people living in England in 2016–17, particularly in terms of levels of wealth and degree of social and civic engagement, with the highest levels of both evident among southern regions of England and the lowest evident among northern regions.
- Older people living in London are less likely than older people in any other region of England to have access to a car or van when needed. However, they are also the most likely to be frequent users of public transport.

The longitudinal analysis in this chapter shows the following.

- Across all 14 years of ELSA, social and well-being outcomes were continuously better among people living in less deprived and rural areas compared with those in more deprived and urban areas.
- Social and mental well-being outcomes often decline at a greater rate among more deprived and more urban areas than among less deprived and rural areas.

- Social engagement declines at a greater rate over time among older people living in both more deprived and urban areas, compared with those living in less deprived and rural areas.
- The proportion of older people without access to a car when needed declines with age, but this decline occurs at a greater rate among those from more deprived areas.
- Moving into more deprived areas in later life is damaging to mental well-being, compared with moving into less deprived areas.
- Compared with not moving at all, older people who moved into areas of higher or lower deprivation observed an increase in levels of social and civic engagement.

3.1 Introduction

The work in this chapter examines the effects of area on mental well-being and social inequality, in terms of forms of social engagement, use of private and public transport, and employment, Understanding the effects of area and neighbourhood on the social well-being of older people is important if area-level strategies to deal with social inequality are to be successful. Area effects are particularly important to consider as, even when they are small in magnitude, they affect a large number of people living within them (Craig 2005). Several studies have focused on the influence of neighbourhood characteristics on a variety of outcomes in old age, including physical activity (Van Cauwenberg et al., 2014), social and physical functioning (Bowling and Stafford, 2007), mental health (Gale et al., 2011) and depression (Kubzansky et al., 2005; Marshall et al, 2014). Furthermore, a study by Laporte et al. (2008) has suggested that the effects of neighbourhood on mental well-being might be particularly evident among older populations.

There are several theories surrounding the mechanisms through which area can affect well-being and health. Glaster (2012) identifies four key aspects of neighbourhood that can affect individuals' well-being: 'social interactive', whereby the individual is influenced by the behaviours and characteristics of others around them; environmental, whereby the individual is affected by issues such as crime, insecurity and neglected surroundings; geographical, whereby individuals are affected by their neighbourhood's proximity to public services and general accessibility; and institutional, which incorporates the extent to which neighbourhoods are stigmatised because of certain characteristics. In support of these possibilities, there is evidence demonstrating that poorer neighbourhoods are associated with higher rates of smoking (Kleinschmidt et al., 1995) and lower rates of physical activity (Yen and Kaplan, 1999). In addition, social network theory hypothesises that living in more deprived neighbourhoods relates to not having access to social networks that offer opportunity for social enhancement (Granovetter, 1995). For example, getting work in areas with high unemployment might be harder due to homogeneous networks of ties hindering opportunities for social mobility. Furthermore, potential employers might be reluctant to employ individuals from neighbourhoods that are stigmatised due to their negative characteristics (Galster, 2002; Friedrichs et al. 2005;). Poor infrastructures and high crime rates create feelings of insecurity and have the potential to deter individuals from engaging meaningfully in society (Yen and Kaplan, 1999; Cummins et al., 2005). A lack of belonging and sense of purpose further strengthens the potential for poorer mental well-being (Kawachi and Berkman, 2001), while higher social cohesion has been shown to be associated with lower depression levels (Stafford et al., 2011). Additionally, limited personal resources may hamper individuals' attempts to travel outside their immediate area, strengthening their dependence on the resources available within their neighbourhood (Cummins et al., 2005).

Research into area effects on individual-level social inequality has also focused on the mechanisms through which area-level characteristics might influence individual well-being. For example, while having access to transport might directly benefit the individual's ability to participate in social activity, transport access might also free the individual from restrictions on resources imposed by a restricted ability to move between areas, both of which are likely to be beneficial to mental well-being (Hiscock et al., 2002).

As well as focusing on the effects of neighbourhood deprivation, research has also examined the impact of neighbourhood population density, with mixed results. Areas with dense populations are associated with higher socio-economic deprivation, and more rural areas with less dense populations are generally associated with lower deprivation (Chaix et al., 2006). However, while living in less densely populated areas might be beneficial to the well-being of younger people, the relationship might not be so straightforward among older populations, whose well-being might be negatively affected by greater isolation as a result of poorer physical functioning and reduced access to transport. This might be especially problematic in poorer rural communities, where poorer individual characteristics are combined with reduced opportunities for social engagement and support through social networks (Butcher, 2010).

Research has also shown that residential mobility, or migration, has effects on well-being, and these may be specific to interactions between the stage of life at which the individual migrates and their reason for migration. On the one hand, older people might migrate to certain areas to enjoy their retirement but, on the other hand, migration may also be a consequence of having to move closer to family to either give or receive care, or it might result from a negative financial situation after leaving the workforce (Law and Warnes, 1976).

Although strong associations have been demonstrated previously in terms of neighbourhood and health and well-being, there has been less research considering the effects of area on social outcomes in later life, such as social engagement, working and retirement, and access to transport, alongside well-being itself. In addition, investigating the impact of residential mobility into a new area in later life might be particularly valuable in assessing the influence of area on social and well-being outcomes.

In order to explore these issues, in this chapter, we examine the relationship between where people live and their mental well-being, social engagement, work and retirement experiences, and use of personal and public transport. While looking at mental well-being may offer a more direct measure of how individuals are affected by area characteristics, observing outcomes associated with participation in society, such as work, social activity and use of transport, is also important as engagement with society has also been shown to link strongly to health and well-being (McMunn et al., 2009). From a policy perspective, understanding which areas of social life might be particularly affected by certain area characteristics is key to successfully reducing gaps in social inequality in later life.

3.2 Key research questions

The chapter is structured to focus on three key research questions.

1. How do social inequalities vary on the basis of area type?

In the first part of the chapter, we use cross-sectional tables of outcomes by area type to examine whether social inequality is evident on the basis of area type at wave 8 of ELSA in 2016–17. We hypothesise that social and mental well-being outcomes will be worse among areas with higher levels of deprivation, as well as among urban areas in comparison to rural areas. The analysis will also examine inequality on the basis of region, where we hypothesise better outcomes to be observed among southern regions of England, and poorer outcomes among northern regions.

2. Does social inequality change over time on the basis of area type?

In the second part of the chapter, we use the longitudinal aspect of ELSA to examine changes in social and well-being outcomes over time. Mixed random intercept and slope models are used to demonstrate whether changes in these factors differ for individuals in different areas. First, we hypothesise that levels of outcomes will be continuously worse among areas that are more deprived and urban. Secondly, we hypothesise that declines in outcomes will happen at a greater rate among deprived and urban areas than among less deprived and rural areas.

3. Does a change in area-level deprivation lead to changes in social and mental well-being?

Thirdly, the longitudinal nature of ELSA is used in regression models to examine whether a change in area deprivation leads to a change in mental and social well-being. Here, we hypothesise that, relative to not moving at all, moving to areas of higher deprivation will lead to a decrease in well-being, and moving to areas of lesser deprivation will lead to an increase.

3.3 Methods

3.3.1 Sample

The cross-sectional section of the chapter focuses on 7,224 core sample members, who responded to the ELSA wave 8 interview.

The growth models presented in Section 3.5 uses 28,584 observations from a total of 3,573 core sample members who responded to all eight waves of the ELSA data. The mean age of the sample used at wave 1 is 60.4 (range 50–90) and at wave 8 is 74.8 (range 60–90).

The models of change in area type in relation to well-being and social engagement in Section 3.6 use a sample of 6,107 core members who responded to at least two consecutive waves of ELSA between waves 1 and 8.

3.3.2 Definition of key variables

Predictors

Area

Government office region. Cross-sectional analyses in Section 3.4 explore socio-economic and well-being differences on the basis of nine government office regions (GORs) in England: North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, East of England, London, South East and South West. Previous research using GORs as a marker of area has demonstrated a north–south divide in various aspects of health and well-being (Ellis and Fry, 2010) and this research will examine whether this divide also exists in terms of social outcomes.

Urban or rural indicator. We use a four-category version of a variable indicating how urban or rural an area is. Respondents are classed as living in areas described as ‘urban’, ‘town and fringe’, ‘village’ or ‘hamlet and isolated’. Urban areas have population greater than 10,000 people, with town and fringe, villages and hamlets having increasingly less dense populations (Office for National Statistics, 2013).

Index of multiple deprivation. A quintile variable of the index of multiple deprivation (IMD) is used throughout the chapter. The IMD is comprised of seven dimensions of deprivation measured at the small-area level: income deprivation; employment deprivation; health and disability deprivation; education, skills and training deprivation; barriers to housing and services; living environment deprivation; and crime.

Outcomes

Well-being

Depressive symptoms. An eight-item version of the Centre for Epidemiologic Study Depression scale (CESD-8; Radloff, 1977) measures symptoms of depression. A score of 0 represents no symptoms of depression, and a score of 8 represents the highest possible number of symptoms.

Economic activity

Working and retirement

Respondents are asked to describe their current economic situation from the categories: retired, employed, self-employed, unemployed, permanently sick or disabled, and looking after home or family. The data contain two additional categories that are excluded from this analysis: ‘other not codeable’ and a spontaneous response of ‘semi-retired’. Respondents are classed as employed if they state themselves to be either employed or self-employed. The cross-sectional part of the chapter combines into an ‘other’ category those who report they are unemployed, long-term sick or disabled, or looking after home or family.

Working beyond state pension age

Respondents are considered to be working beyond state pension age (SPA) if they report their current economic situation to be either 'employed' or 'self-employed' and they are of SPA or above. In line with current changes to the SPA, SPA is defined as the age of entitlement to receive the state pension at the time of interview. Throughout the ELSA study period, the SPA is 65 for men. For women, the SPA is 60 until 2010 (wave 5), at which point the SPA rises over time to 63 by the end of 2016.

Work quality

Work quality is measured using responses to two questions regarding effort at work (whether they feel their work is physically demanding and whether they feel under pressure due to workload) and five questions regarding reward (receiving adequate support, adequate recognition, adequate salary, having good job security and having good prospects for promotion). From these questions, a ratio of imbalance between effort and reward is constructed and from this a dichotomised work quality measure is derived. This follows standard practice in this field (Siegrist, 2013).

Social engagement

We use four domains of social engagement throughout the chapter.

Social and civic engagement. This is a continuous variable, with a range of 0 to 8, which gives the number of social and civic organisations respondents belong to. These include belonging to or attending a political party, a neighbourhood watch group, a church or religious group, a charitable association, educational or evening classes, a social club, a sports club or exercise class, or any other organisation.

Cultural engagement. Respondents are asked how often they participate in the following activities: going to the cinema, eating out at a restaurant, going to a gallery or museum, and going to the theatre. Here, respondents are classed as engaging in these activities if they report doing them at least once a month. A three-category variable is used to demonstrate the number of activities respondents participate in at least once a month, with the categories 'none' 'one' and 'two or more'.

Close contacts. Respondents are asked how often they meet up with their children, other relatives and friends, and are classed as having 'close contacts' if they report face-to-face meetings with these people at least once a week. A three-category variable is used throughout the chapter to show the number of close contacts respondents have, with the categories 'none', one' and 'two or more'.

Volunteering. A three-category variable showing how frequently individuals volunteer is derived from a question put to ELSA members with six possible responses. Those who report they volunteer twice a month or more are classed as frequent volunteers, those who report volunteering about once a month, every few months or once or twice a year are classed as less frequent volunteers, and those who report volunteering less than once a year and those who report that they never volunteer are grouped together as not volunteering.

Transport

We focus on two aspects of transport use among older people: car access and public transport use.

Car access. A binary variable is used to differentiate those respondents who report having access to a car or van when needed from those who do not. A further binary variable identifies, for those respondents who do have access to a car or van when needed, whether that access is by means of driving the vehicle themselves or as a passenger only.

Public transport use. A three-category variable is derived that identifies the frequency with which respondents use public transport. 'Frequent' users are those who use public transport at least once a week, 'less frequent' users are those who use public transport less than once a week, and 'non-users' are those who report never using public transport.

Reasons for not using public transport. A set of variables in the ELSA data ask those respondents who report never using public transport whether 13 different situations prevent them from doing so. A principal component analysis was run in order to create a smaller number of response categories to be included in the cross-sectional analysis. Five types of explanation were identified as follows:

- 'not available' is comprised of those who report they do not use public transport because it is not available or does not go where they need it to go;
- 'unreliable' incorporates those who do not use public transport because it is unreliable, infrequent or not convenient;
- 'too expensive' incorporates those who state they do not use public transport because it is too expensive;
- 'health' includes those who do not use public transport because their health prevents it or they have difficulties with mobility;
- 'no need' includes those who do not use public transport because they do not need to, as well as those who report preferring to walk.

Two further categories were identified: 'crime' incorporates those who do not use public transport because of fear of crime, or because it is too dirty; and 'other' comprised respondents who reported another unspecified reason for not using public transport. However, the number of respondents within these categories was low so they were excluded from the analyses.

Classificatory measures

All models include measures for age, gender, marital status, wealth and self-reported health.

Age. Age is included as a grouped variable with the categories 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80–84 and above 85.

Marital status. Marital status is included as a six-category variable with responses 'married (including those in a civil partnership)', 'cohabiting', 'single and never married', 'widowed', 'divorced' and 'separated'.

Wealth. Wealth is measured as household unit non-pension wealth, including all financial assets, property, other physical assets and assets of any businesses owned by the individual and household members (if applicable). The measure is net of debt, including mortgages. Individuals are grouped by the household unit into quintiles with one denoting lowest wealth and five denoting highest.

Self-reported health. A five-point Likert-scale response to the question of how the respondent rates their overall health measures self-reported health, with possible response categories of ‘excellent’, ‘very good’, ‘good’, ‘fair’ or ‘poor’.

3.4 Cross-sectional analysis: area and inequality in 2016–17

In this section, we explore key social characteristics of the three measures of area in 2016–17. We focus on 7,224 core sample members who responded to ELSA at wave 8. All analyses are weighted using the wave 8 cross-sectional weight. Table 3.1 shows the frequency and percentage of respondents living in each area type of interest in 2016–17. The south of England, including London, incorporates two-fifths of the entire ELSA sample at wave 8, with the remainder of the sample reasonably evenly distributed across the north of England and the Midlands. In 2016–17, a little over two-fifths (47%) of the ELSA population live in areas falling within the two least deprived quintiles of the IMD. Additionally, three-quarters of the ELSA sample are living in urban areas in 2016–17.

3.4.1 Individual characteristics and area type in 2016–17

Age

Tables 3A.1–3A.3 in Appendix 3A show the percentages of respondents in each area type by age group in 2016–17.

Around a third of all older people in all regions are between 50 and 59, apart from the East Midlands where this figure is less than a quarter. A further quarter of people living in the East Midlands are aged 60–64, which is the largest proportion of this age group of all areas. Over half of all older people living in London are aged between 50 and 64.

A slightly higher proportion of younger people live in the most deprived areas in 2016–17. Just over half of those living in the most deprived areas are aged below 65, although age is reasonably stable across all areas regardless of their level of deprivation.

Age is reasonably evenly distributed across both urban and rural areas.

Marital status

Around two-thirds of older people in all GORs were married in 2016–17. Marital status is reasonably evenly distributed across GORs, although London has a noticeably higher proportion of people who are single and never married than any other region.

Table 3.1. Frequencies and percentages of respondents living in area types classified by region, IMD, and urban or rural, in 2016–17

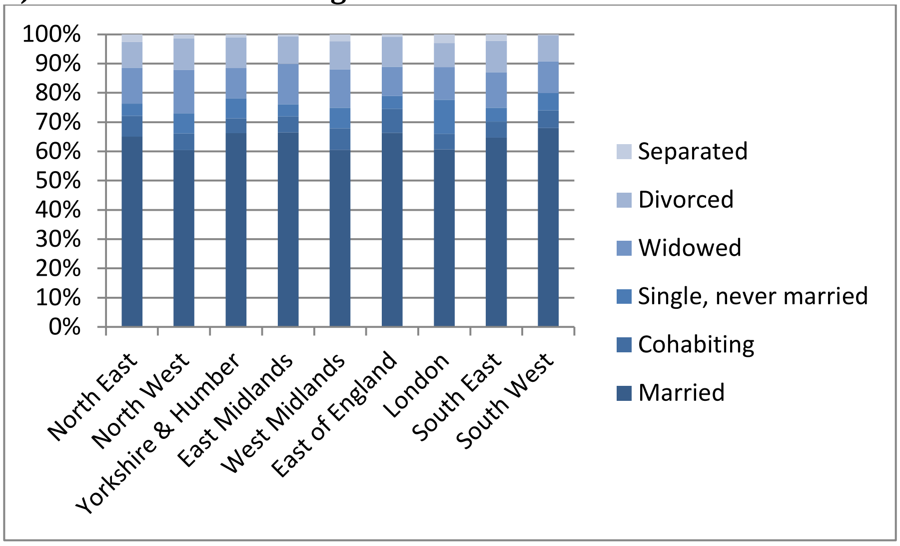
	Frequency	Percentage
Government office region		
North East	370	5.2
North West	956	13.4
Yorkshire and the Humber	716	10.0
East Midlands	644	9.0
West Midlands	754	10.6
East of England	836	11.7
London	823	11.5
South East	1,214	17.0
South West	820	11.5
Index of multiple deprivation		
Least deprived	1,633	22.9
Second quintile	1,719	24.1
Third quintile	1,471	20.6
Fourth quintile	1,311	18.4
Most deprived	998	14.0
Urban indicator		
Urban	5,331	74.7
Town and fringe	807	11.3
Village	738	10.4
Hamlet and isolated	257	3.6

As shown in Figure 3.1, there is a clear decreasing gradient in the percentage of people who are married as deprivation increases. Almost three-quarters of people living in the least deprived areas are married, compared with just half of those living in the most deprived areas. This is coupled with an increase in the proportion of people who are separated or divorced as deprivation increases. Over twice as many people living in the most deprived areas are either separated or divorced as those living in the least deprived areas (20% and 9%, respectively). The proportion of people who are single and never married also increases as deprivation increases, with almost three times as many people in the most deprived areas reporting that they are single as in the least deprived areas.

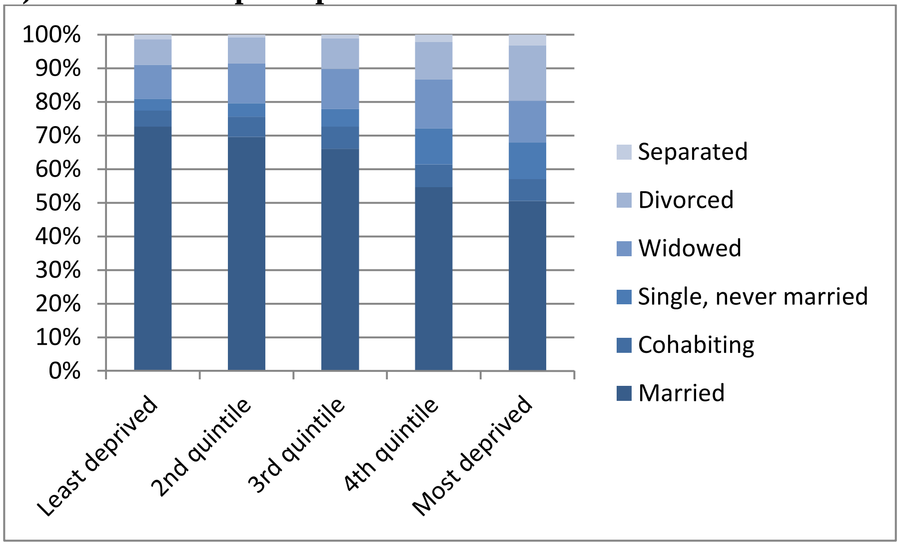
As areas become more rural, the proportion of people who are married or cohabiting increases. The percentage of people who are divorced or separated is highest among those living in the most urban areas, as is the proportion of those reporting to be single and never married.

Figure 3.1. Marital status by area type in 2016–17

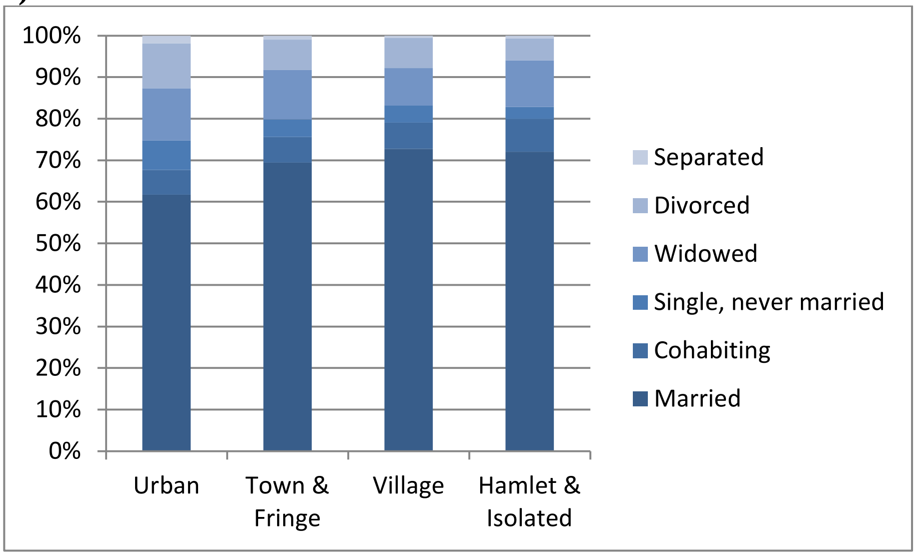
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator

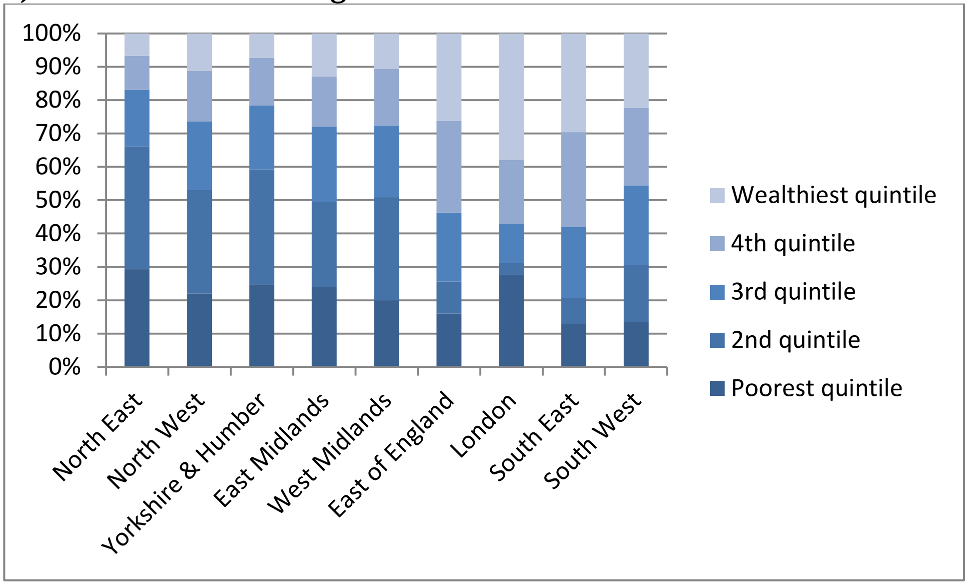


Wealth

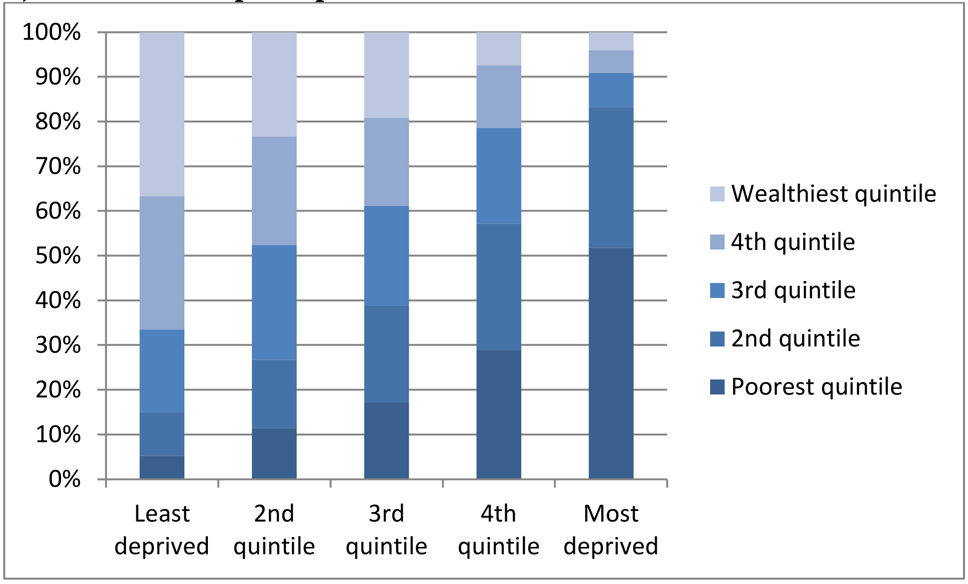
There are clear differences in wealth on the basis of GOR. On average, areas in the south of England have a much higher proportion of wealthier older people than areas in the north of England. Almost two-fifths of older people living in London fall into the highest quintile of wealth, although, simultaneously, over a quarter of people in London fall into the poorest quintile. Two-thirds of people in the North East fall into the poorest two quintiles of wealth, compared with less than a third of all people living in London, the South East or the South West. Only around 10% of people living in northern regions of England fall into the wealthiest quintile.

Figure 3.2. Wealth quintile by area type in 2016–17

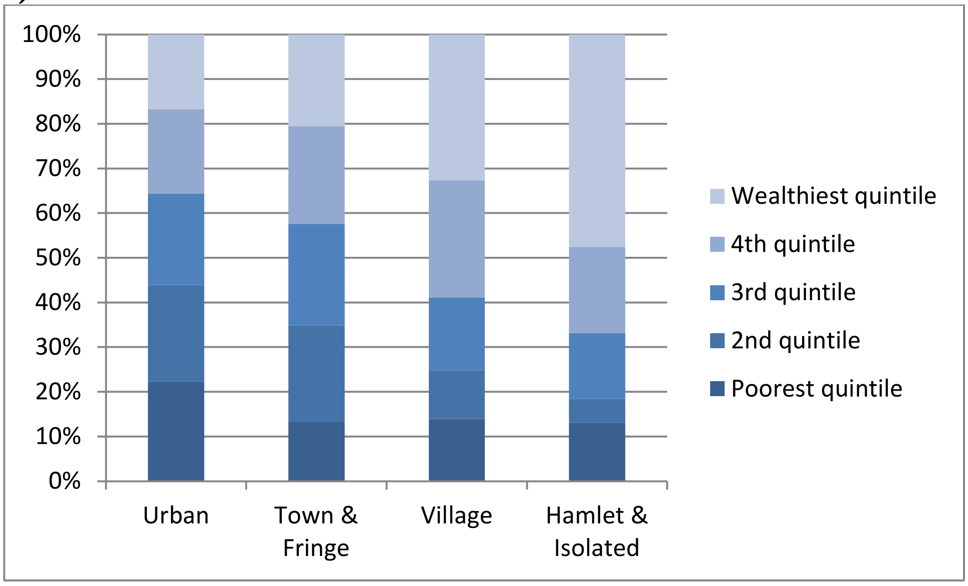
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator



Wealth declines steadily with increasing deprivation. Two-thirds of older people living in the least deprived areas of England fall into the two highest quintiles of wealth. Over four-fifths of people living in the most deprived areas fall into the bottom two quintiles of wealth, and over half fall into the poorest category.

There is also a strong gradient of increasing wealth as areas become more rural. Almost half of all people living in the most rural areas fall into the wealthiest quintile, compared with less than a fifth of those living in the most urban areas. Over a fifth of people living in the most urban areas fall into the poorest quintile of wealth, with over two-fifths falling into the two poorest quintiles. Fewer than half of people living in the most rural areas fall into the bottom two wealth quintiles.

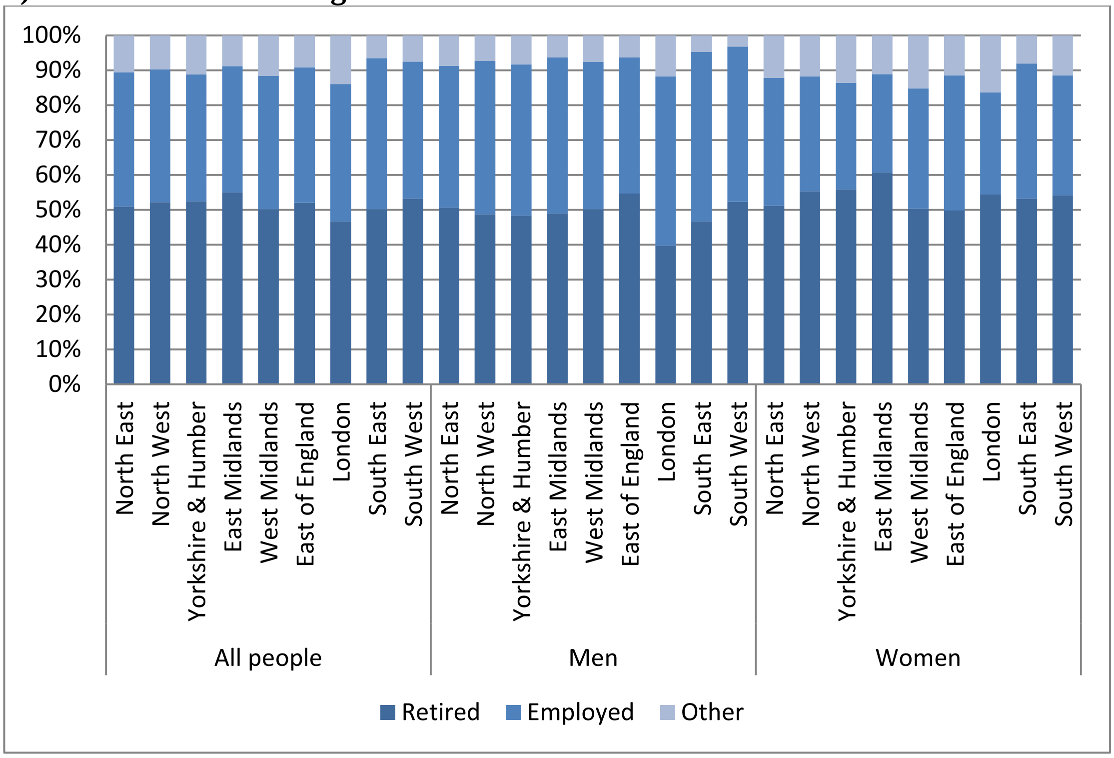
Area, working and retirement

Figure 3.3 shows the percentages of older people working, retired, or belonging to an 'other' category of economic status by area type in 2016–17. As well as showing overall rates, it also shows rates for men and women separately.

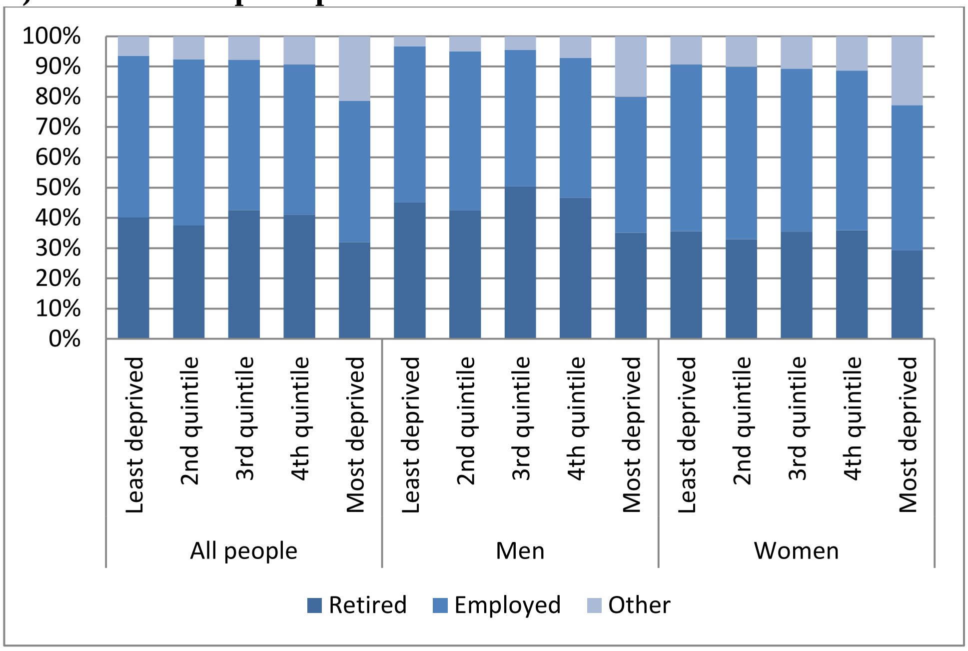
Overall, the East Midlands, East of England and South West have the highest rates of retired people among residents aged 50 or older. When broken down by gender, there is a significantly higher proportion of retired women living in the East Midlands than men (61% and 49%, respectively). London is the only region with less than half of all residents aged 50 or older reporting they have retired, although London also has the highest percentage of people reporting their economic status as 'other'. The highest proportion of all working individuals is observed in the South East (43%).

Figure 3.3. Economic status by area type in 2016–17

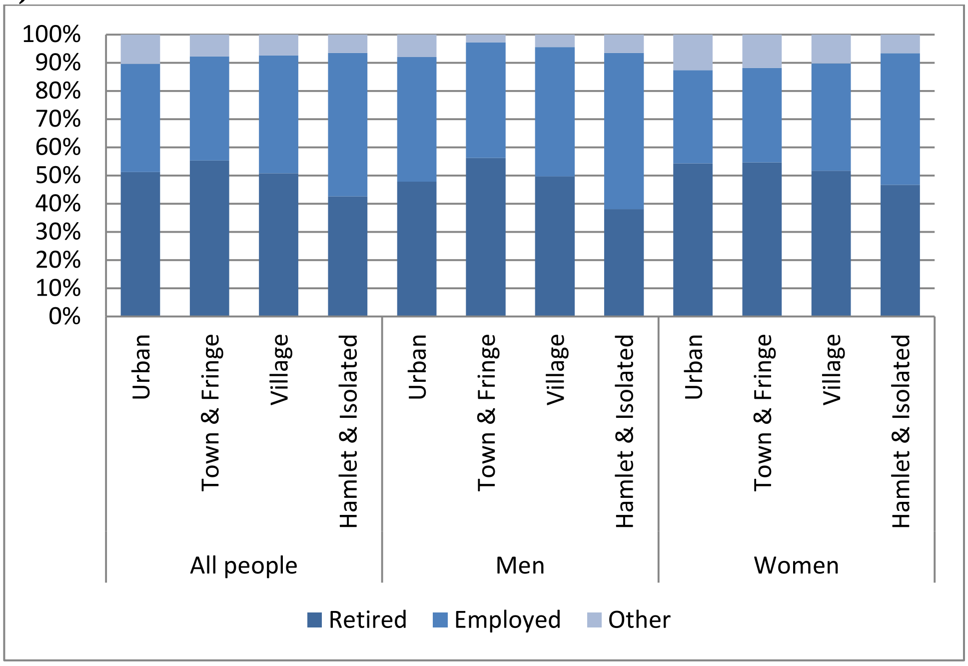
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator



Among both men and women, over half of all respondents in the two least deprived quintiles report being retired. In all instances, the lowest rates of retirement are reported among those living in areas falling into the most deprived quintile, especially among men. The largest observable difference across quintiles, however, is in the proportion of people reporting their economic status as ‘other’ (long-term sick, unemployed or looking after home or family), with around a fifth of both men and women in the most deprived areas being in this category. There are almost as many women in the most deprived area who report their economic status as ‘other’ as those who categorise themselves as ‘employed’ (23% and 29%, respectively).

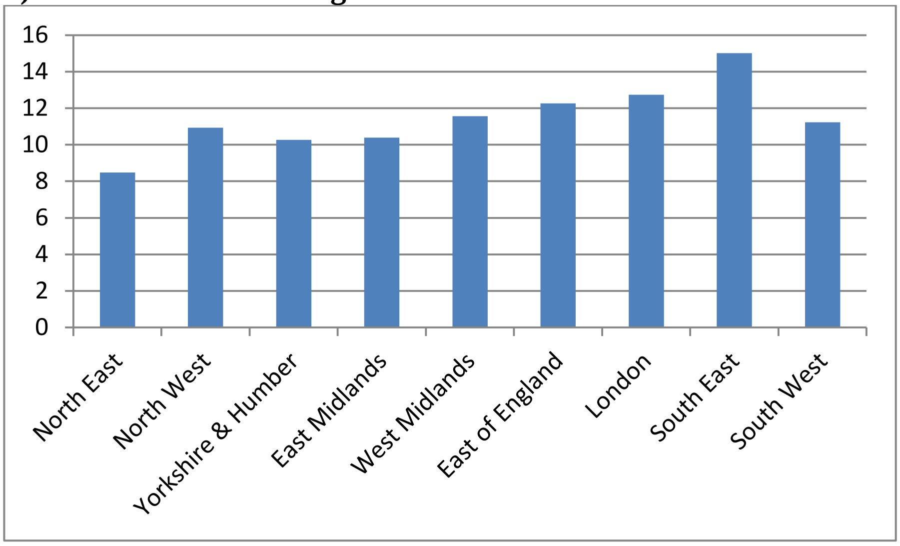
Over half of both men and women living in town and fringe areas are retired. Among all older people, the highest proportion of workers is found among the most rural areas, with over half of men living in these areas reporting that they are still in employment. The highest proportion of individuals reporting their economic status as ‘other’ is found among urban areas, with the highest rates again observed among women.

Working over state pension age

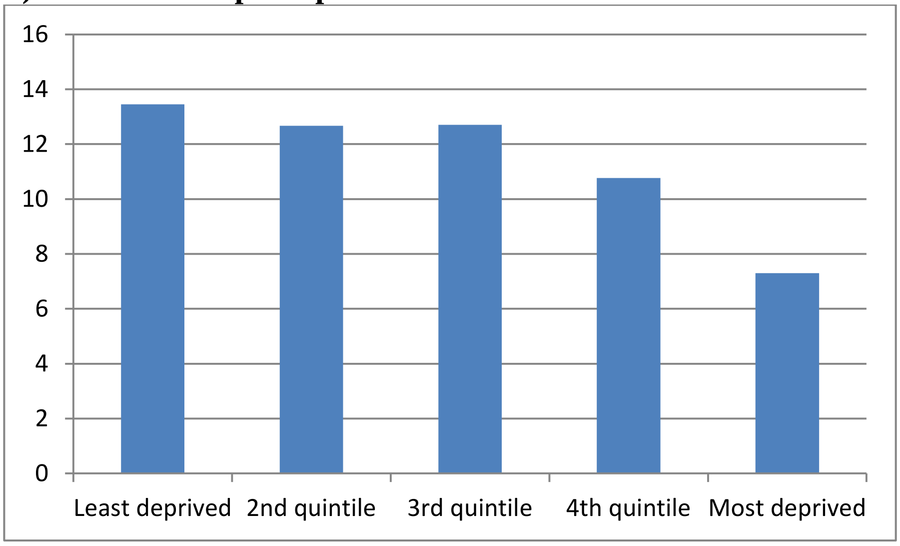
Figure 3.4 shows the proportion of ELSA respondents who are of SPA and above and in employment in 2016–17. The SPA is defined as the current age at which respondents are eligible to receive state pension at the time of interview. Charts are shown for all ELSA respondents, but results are broken down by gender in Tables 3A.13–3A.15 in Appendix 3A.

Figure 3.4. Percentage of people of SPA and above who are employed or self-employed, by area type in 2016–17

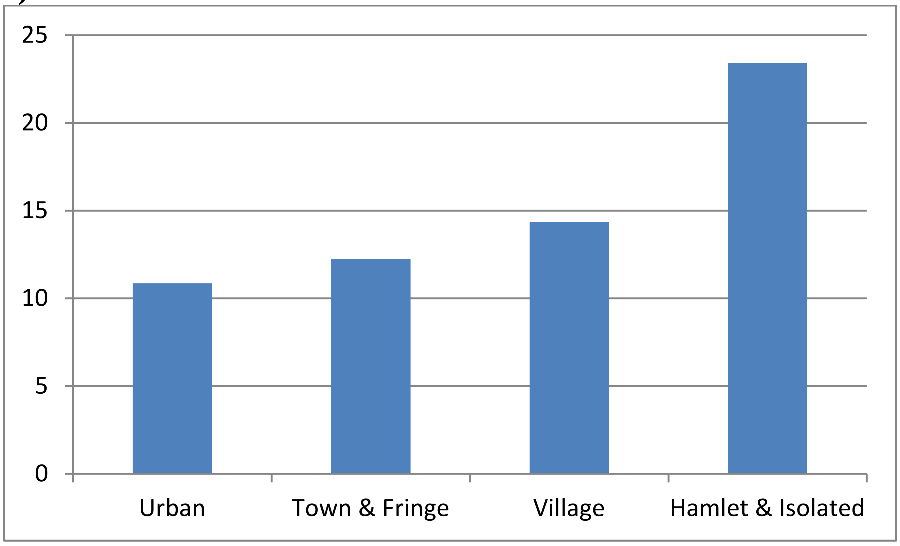
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator



Across all GORs, women are less likely to work beyond SPA than men. However, among men, on average, a higher proportion above the SPA are still working in the south of England, and the lowest proportion in northern regions. Not shown in the charts, but reported in Tables 3A.13–3A.15 in Appendix 3A, is that women above the SPA are much more likely than men to report an 'other' economic status.

Men of SPA and above, living in less deprived areas, are more likely to continue working than those in more deprived areas. This is especially true among men, with around twice as many men of SPA and above, in the least deprived areas, working instead of retiring, compared with those in the most deprived areas (17% and 8%, respectively). Not shown in the charts is that both men and women aged SPA and above are more likely to report an 'other' economic status if they live in the most deprived areas of England.

There is a gradient of increasing percentages of people aged SPA and above continuing to work as areas become more rural. This is true for both men and women, although the association is strongest among men. Almost a third of men (29%) in the most rural areas who are aged SPA and above continue to work, with half of this number in the most urban areas continuing to work (14%).

Work quality

Of older workers in 2016–17, Figure 3.5 shows the proportion of those working in poor quality employment, as defined by the model of effort–reward imbalance. Results are presented for all ELSA respondents, but Table 3A.16 in Appendix 3A breaks the results down by gender.

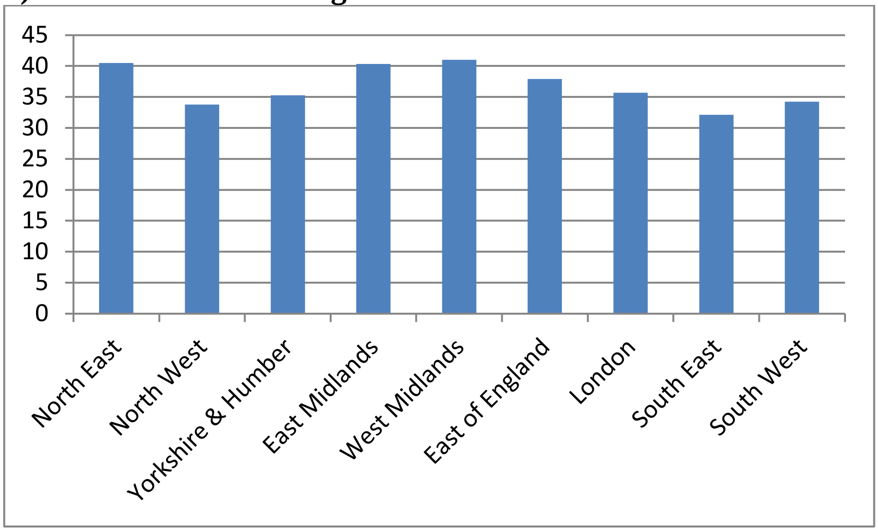
Among all employed people aged 50 and over in 2016–17, around two-fifths of those living in the North East, East Midlands and West Midlands report working in conditions with a poor effort–reward balance. When the older working population is broken down by gender, women living in these areas are especially likely to report poorer working conditions, with half of all older women working in the North East working in poor quality employment. Among men, the highest levels of poor quality work are observed within London, with around two-fifths reporting suboptimal working conditions.

For both men and women, higher proportions of older workers in more deprived areas report poor working conditions than those in less deprived areas. This relationship is particularly true among men, where between two-fifths and half of all older workers in areas falling into the two most deprived quintiles of deprivation reporting poor working conditions, compared with around a quarter of men living in the least deprived areas.

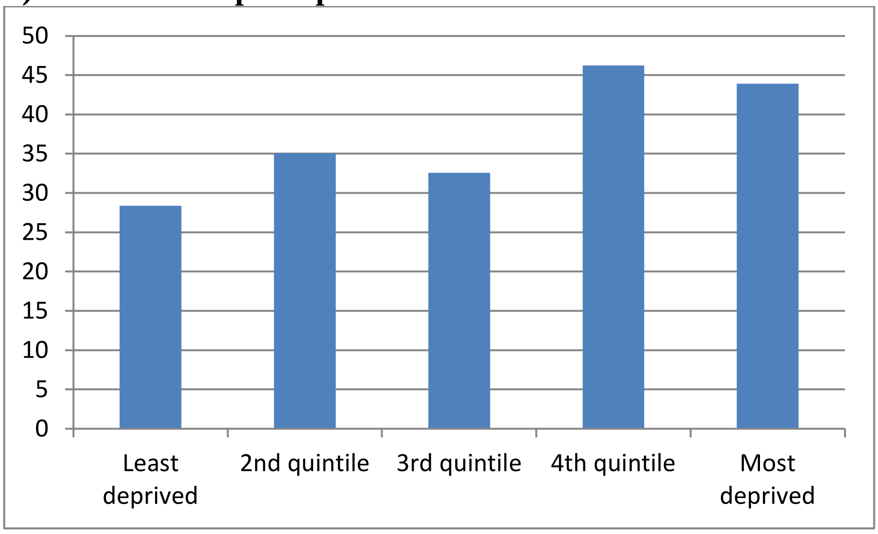
Older workers in urban areas are more likely to report poorer working conditions than those living in rural areas.

Figure 3.5. Percentages of workers in poor quality employment, by area type in 2016–17

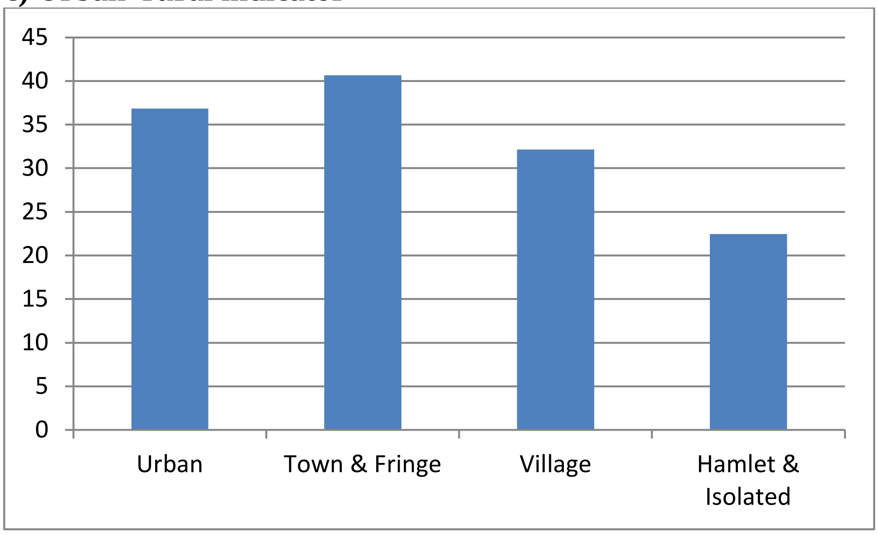
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator



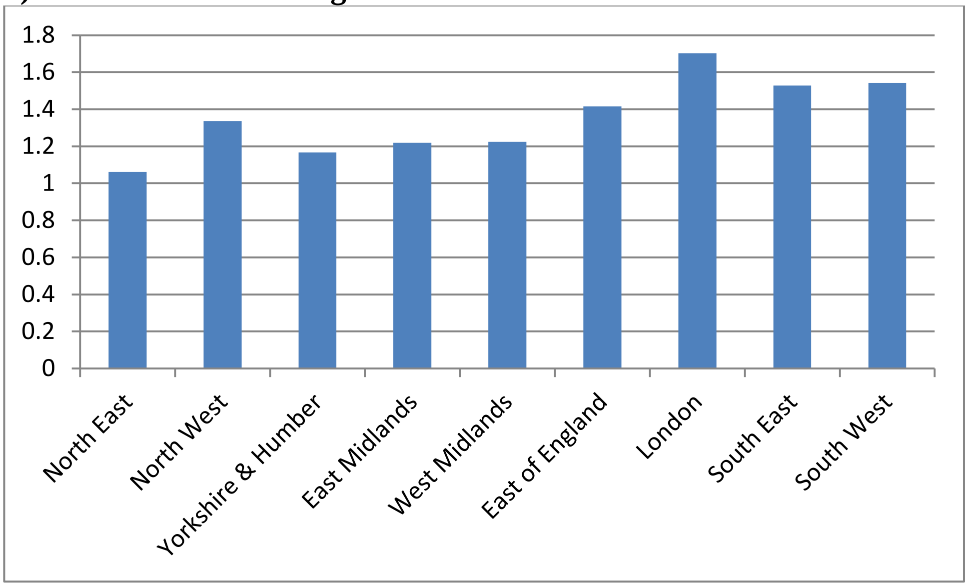
Social engagement

Figure 3.6 shows the number of civic and social organisations participants are members of by type of area. The figures show results for men and women combined, but results are also discussed in relation to gender, the tables for which are presented in Appendix 3A (Tables 3A.19–3A.21).

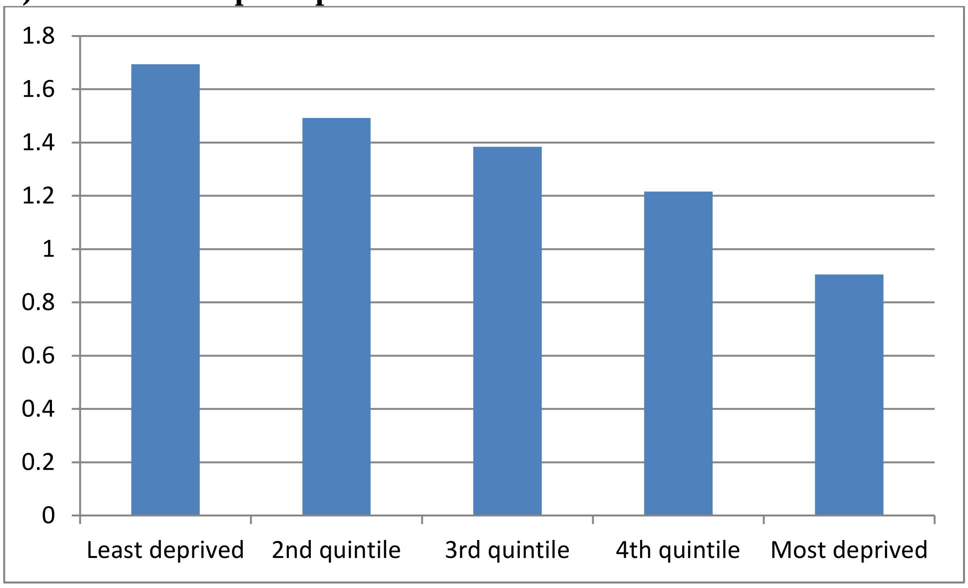
The highest levels of social and civic engagement are reported in London, South East and South West. All northern regions of England report overall lower levels of engagement than southern regions, with the North East reporting the lowest levels of engagement for those aged 50 and above; as can be seen in Table 3A.19, this is especially evident among older women.

Figure 3.6. Mean number of social and civic organisations belonged to, by area type in 2016–17

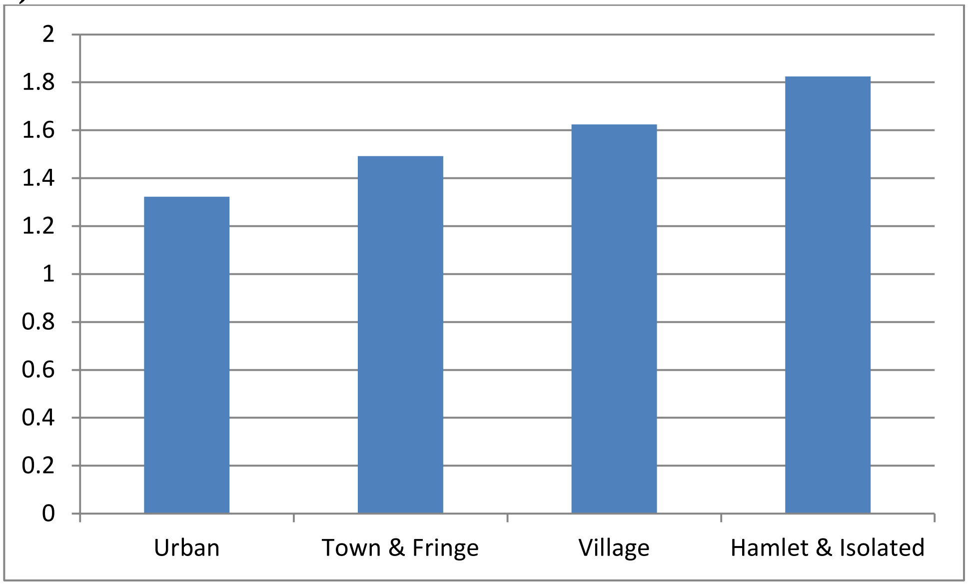
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator



There is a strong gradient between increasing levels of deprivation and decreasing levels of social and civic engagement.

Among the older population in general, social and civic engagement increases as areas become more rural.

Volunteering

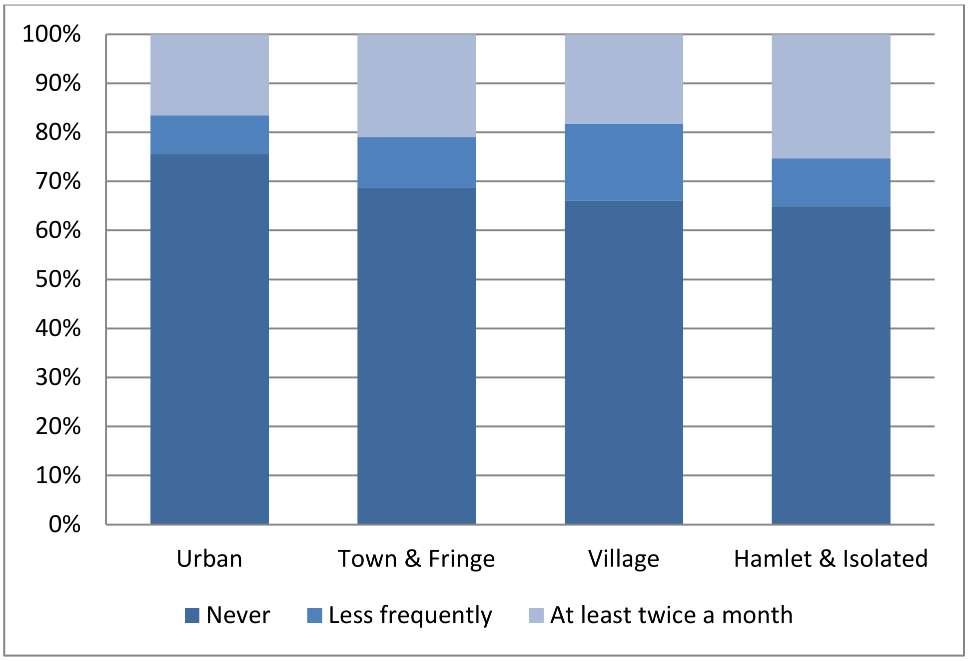
Figure 3.7 shows the proportion of people volunteering by the urban indicator variable. The figure show results for men and women combined, but results are also discussed in relation to gender in Table 3A.24 in Appendix 3A. Tables of volunteering by GOR and IMD are also shown in Appendix 3A (Tables 3A.22 and 3A23), and are discussed here.

Among older people in general, the highest rates of frequent volunteering are found in the southern regions of England and the lowest in the northern regions, although rates in the North West are considerably higher than those reported in the North East and Yorkshire and the Humber. The lowest percentage of men reporting frequent volunteering is in the North East (7%), while the highest is in the East of England, where over two-fifths of men report frequent volunteering (22%). Among women, the lowest rates of frequent volunteering are found in the North East (12%), while the highest is in the South West (23%).

Overall, there is a steady increase in the percentage of people who report they never volunteer as deprivation increases, although the most frequent level of volunteering is reasonably stable across all quintiles of deprivation apart from the most deprived, where around half as many people volunteer frequently as in the least deprived quintile (11% and 20%, respectively). Among women, just over a quarter of those living within areas in the least deprived quintile of deprivation volunteer frequently, compared with less than 10% of those living in areas within the most deprived quintile. Just over two-thirds of women living in areas in the least deprived quintile report never volunteering, compared with over four-fifths of women living in areas with the highest levels of deprivation (64% and 86%, respectively).

Among all older people, there is a trend for the proportion of individuals who report never volunteering to increase as areas become more urban. The highest rates of both men and women reporting frequent volunteering are found in the most rural areas, at around a quarter of each.

Figure 3.7. Volunteering by urban–rural indicator



Cultural engagement

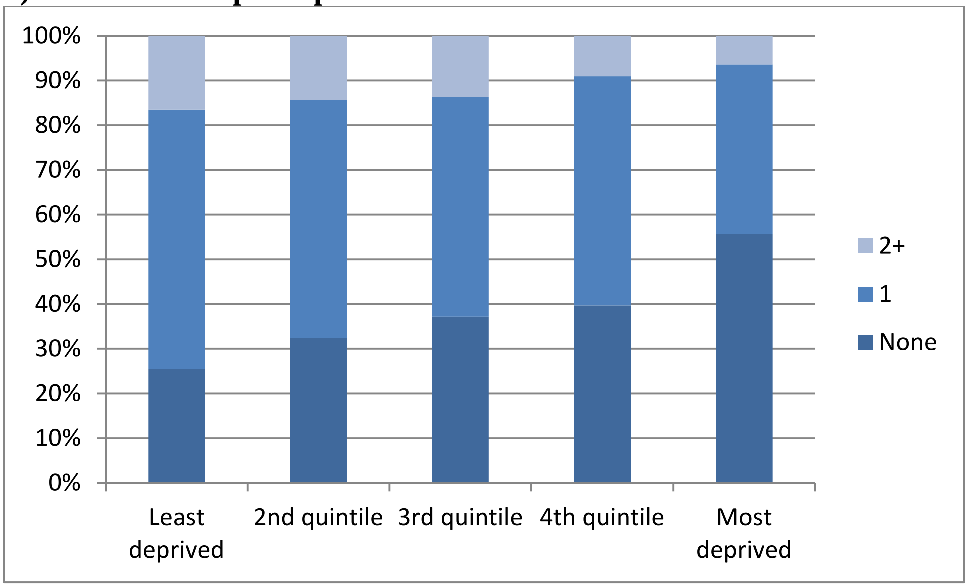
Figure 3.8 shows the number of cultural activities engaged in by IMD and the urban indicator variable. Here, cultural engagement is defined as the number of cultural activities, such as going to the cinema, visiting a museum or gallery, going to the theatre or eating at a restaurant, the respondent participates in at least once a month. Tables 3A.25–3A.27 in Appendix 3A show the results broken down by gender, as well as for GOR.

Among both men and women, those living in the southern regions of England generally report the highest levels of cultural engagement, and those living in the northern regions generally report the lowest. Around a fifth of both men and women living in London engage in at least two cultural activities once a month, or more. However, London also has the highest rate of women who do not participate in any cultural activities, with around two-fifths (41%) reporting so. The East Midlands has the lowest proportion of men reporting the highest levels of cultural engagement (6%) and also the highest rate of those reporting the lowest levels of engagement, with almost half of all older men living within the East Midlands reporting they do not participate in any cultural activities on a regular basis.

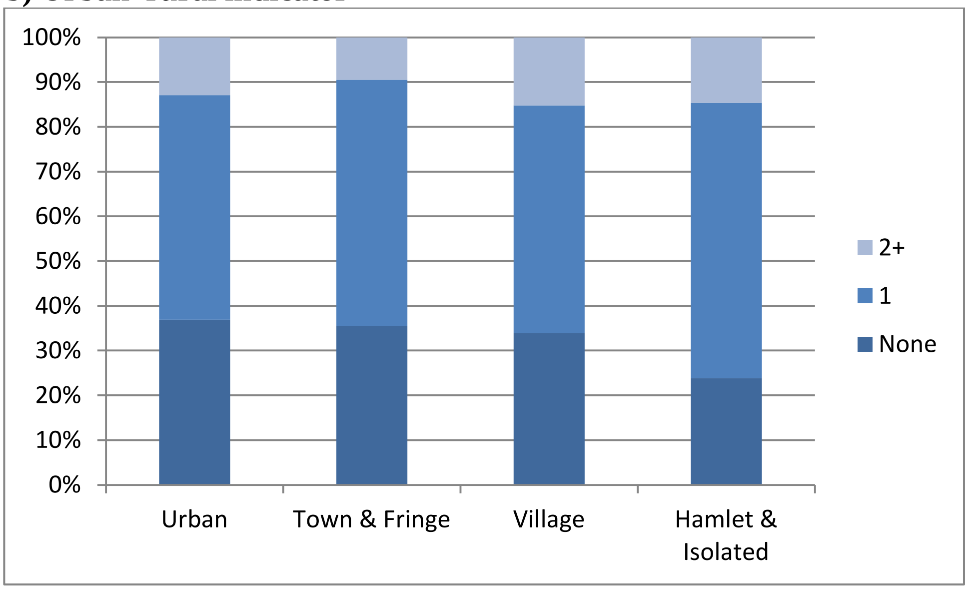
There is a clear gradient of increasing cultural engagement with decreasing levels of deprivation. Over half of all older men and women living in the most deprived areas of England engage in no cultural activities on a regular basis, compared with around a quarter of those in the least deprived areas. Around twice as many men and women in the least deprived areas participate in the highest levels of cultural engagement compared with the most deprived areas.

Figure 3.8. Percentage of respondents engaging in none, one and two+ cultural activities, by area type in 2016–17

a) Index of multiple deprivation



b) Urban–rural indicator



The lowest levels of older people who do not engage in any cultural activities at least once a month are reported in the most rural areas, yet the proportion of people reporting the highest level of cultural engagement is reasonably similar across both urban and rural locations. However, the proportion of both men and women who report engaging in one cultural activity once a month is highest in the most rural locations. This could be due to a higher proportion of older people in rural areas having better access to their own transport than in more urban areas, enabling easier access to cultural activities.

Close contacts

Figure 3.9 shows the number of close contacts respondents report seeing face-to-face frequently by IMD and the urban indicator variable. Charts show results for all ELSA respondents, and Tables 3A.29 and 3A.30 in Appendix

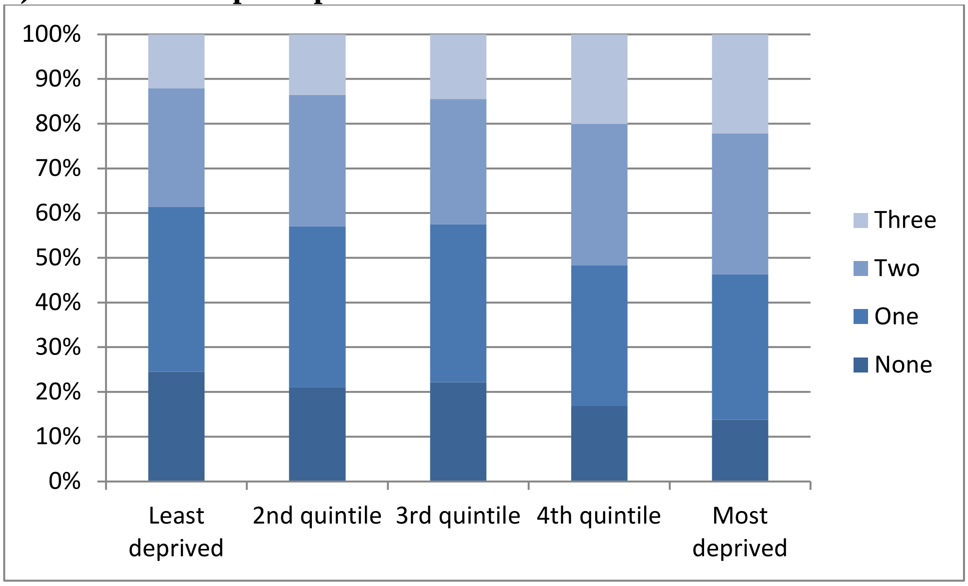
3A show results broken down by gender, and Table 3A.28 also includes results for GOR.

Across all areas, men are generally likely to have fewer close contacts than women. Almost a third of all men in the East Midlands report having no contacts with whom they meet at least once a week. Men in the East of England have the lowest rate of reporting the highest number of contacts (7%) compared with almost two-fifths of men in London who report meeting up with at least two close contacts once a week or more. Women living in northern regions of England report having most close contacts.

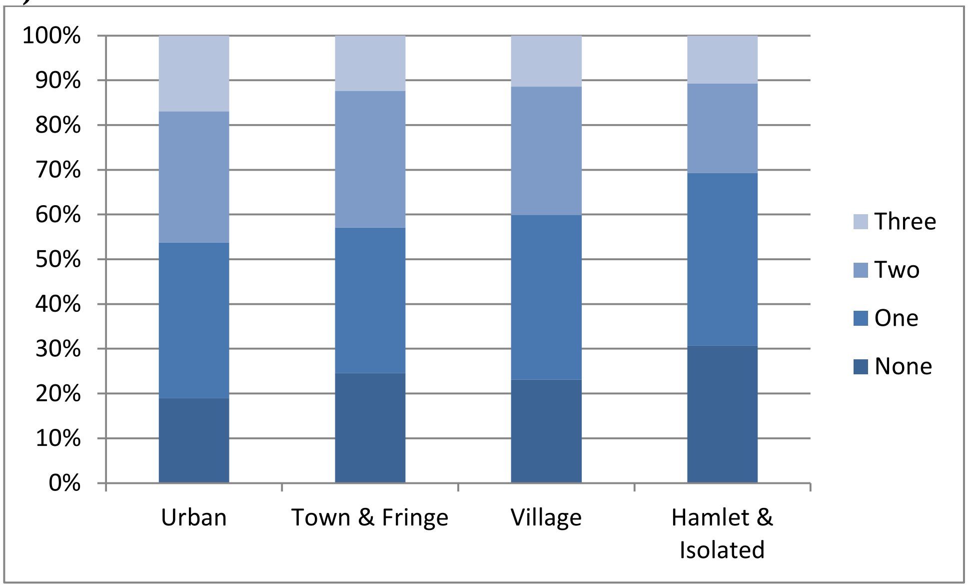
There is a clear gradient in decreasing percentages of both older men and women with no close contacts, and increasing percentages of men and women with the highest number of contacts, as deprivation increases.

Figure 3.9. Percentage of respondents with none, one or two+ close contacts, by area type in 2016–17

a) Index of multiple deprivation



b) Urban–rural indicator



The proportion of older people reporting no close contacts decreases as deprivation increases. Around a quarter of people in the least deprived areas have no close contacts with whom they meet on a regular basis, compared with 14% of people in the most deprived areas. Around twice as many people in the most deprived areas regularly meet up with close contacts compared with the least deprived areas (22% and 12%, respectively).

The highest percentages of both men and women who report having no close contacts with whom they meet at least once a week are in the most rural areas. Those living in rural areas are slightly less likely than those in urban areas to report having two or more close contacts they meet up with on a regular basis.

Transport

Figure 3.10 shows the proportion of respondents who do not have access to a car or van when needed by area type, and Figure 3.11 shows, of those who do have access to a car, the proportion who only have access as a passenger rather than as the driver of the vehicle themselves. Figure 3.12 shows the frequency of respondents' public transport use, by area type. Results here are shown for all ELSA respondents in 2016–17, but Tables 3A.31–3A.33 in Appendix 3A also show the results broken down by gender.

Across all regions of England in 2016–17, women are more likely to report not having access to a car when needed (19%) than men (11%). London has the highest proportion of all older people without car access when needed, at just over a fifth. Furthermore, of older people living in London who do have access, almost a quarter only have access as a passenger, rather than as the driver of the vehicle (23%). However, London also has the highest rate of frequent public transport use for both men and women. Around two-thirds of older people use public transport in London once a week or more, and only around a tenth of older people living in London report never using public transport (62% and 11%, respectively). This is compared with only half as many people using public transport at least weekly in any other area of England, with the second highest rates of the most frequent public transport use reported in Yorkshire and the Humber (32%) and the North East (31%).

Having no car access increases with increasing levels of deprivation for both men and women. Less than 60% of women living in the most deprived areas report having access to a car when needed, compared with over 90% in the least deprived areas. Of those who do have access to a car when needed, the proportion of older people having access only as passengers increases as deprivation increases. Over a quarter of all older people in the most deprived areas only access private transport as passengers, compared with just a tenth of those in the least deprived areas (28% and 10%, respectively). The proportion of older people using public transport at least weekly generally increases as deprivation increases, with over a third of people in the most deprived areas using public transport at least weekly compared with around a fifth of those living in the least deprived areas. However, less frequent public transport use (anything less than once a week) is reported most among those in the least deprived areas. Here, half of all older people use public transport infrequently, compared with 30% of those living in the most deprived areas. Rates of older people never using public transport are reasonably similar regardless of area deprivation, although the lowest rates of non-users are reported in areas falling into the middle quintile of deprivation.

There is a slight decrease in having no car access when needed as areas become more rural, with the lowest rates of no car access reported among men living in the most rural areas (2%). Having access to a car only as a passenger is more commonly reported among more urban areas, with over twice as many older people in the most urban areas only accessing private transport as passengers than in the most rural areas (17% and 8%, respectively). The percentage of people never using public transport becomes more frequent as areas become more rural. Almost half of older people living in the most rural areas never use public transport, compared with less than a third of those living in the most urban areas (48% and 29%, respectively). Using public transport once a week or more becomes less common as areas become more rural, with around two-thirds fewer people in the most rural areas using public transport at least weekly than in the most urban areas (31% and 8%, respectively).

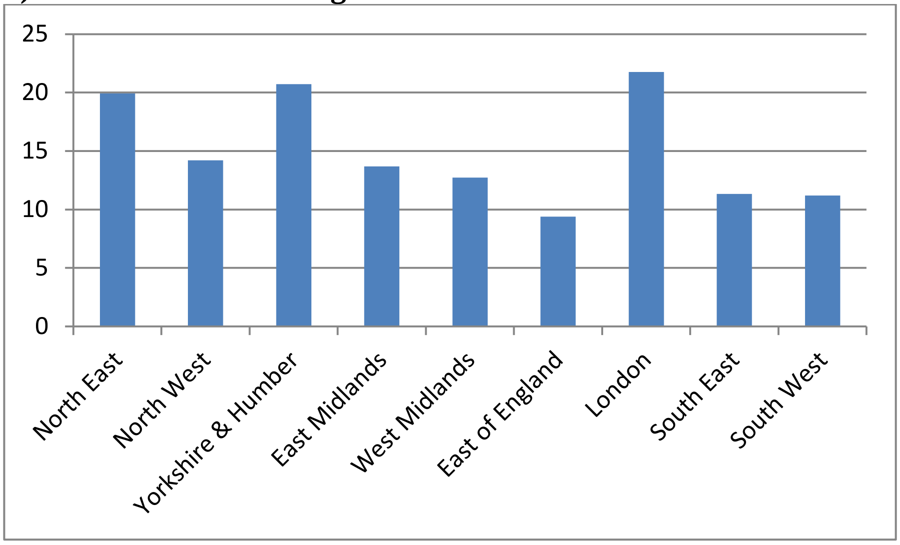
Figure 3.13 shows the reasons, by area, why respondents who do not use public transport fail to do so. The charts show the five main types of reason for not using public transport: not available, unreliable, too expensive, because of health problems and no need. A further two categories, ‘crime’ and ‘other’ were not included as numbers of respondents reporting these as reasons for not using public transport were very small. ELSA respondents were able to give more than one reason as to why they did not use public transport, so percentages can add up to more than 100.

Figure 3.13(b) shows the most common reason for not using public transport is having no need to use it across all groups, and the proportion of people reporting this remains reasonably stable across all categories of deprivation for both men and women. There is a relationship between a decreasing proportion of people reporting they do not use public transport because it is not available and increasing deprivation, as well as for reporting that public transport is unreliable. Conversely, however, reporting health issues as a reason for not using public transport increases as deprivation increases, particularly among women. A third of older women living in the most deprived areas state they do not use public transport because their health or mobility limits them, compared with 12% of women living in the least deprived areas.

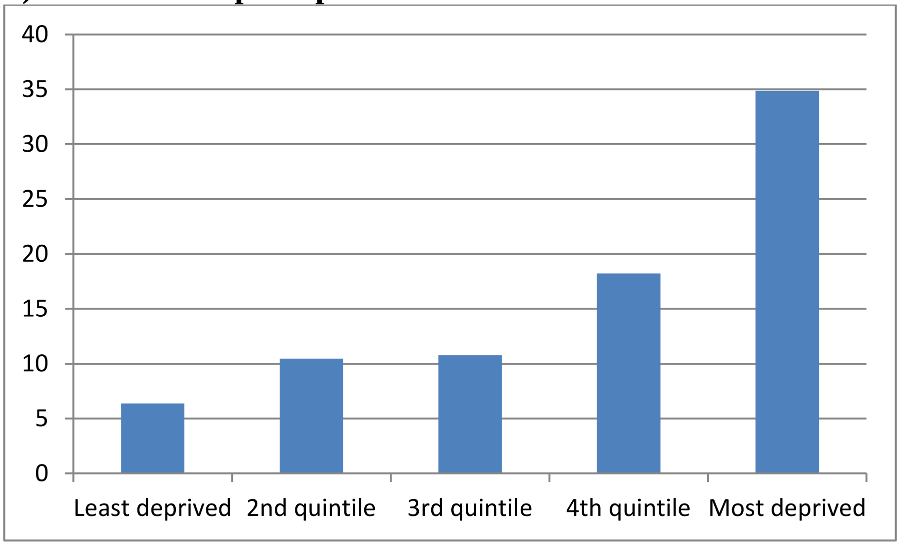
For both men and women, as areas become more rural, reporting that public transport is not available becomes increasingly prevalent, with around 70% of all older people in the most rural areas stating they do not use public transport for this reason. Similarly, the percentage of all people stating they have no need to use public transport decreases as areas become more rural. People living in rural areas are less likely to report they do not use public transport for health reasons than those living in urban areas.

Figure 3.10. Percentage of ELSA respondents without access to a car or van when needed in 2016–17

a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator

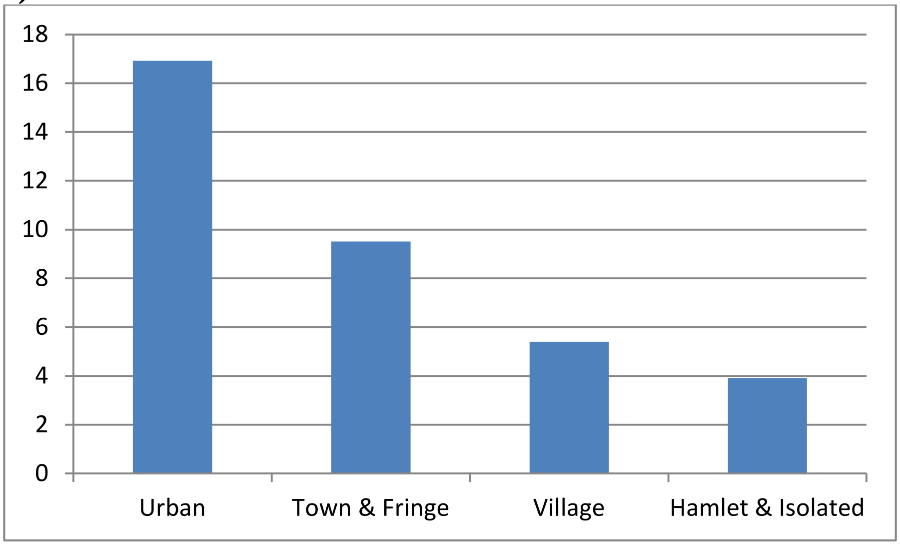
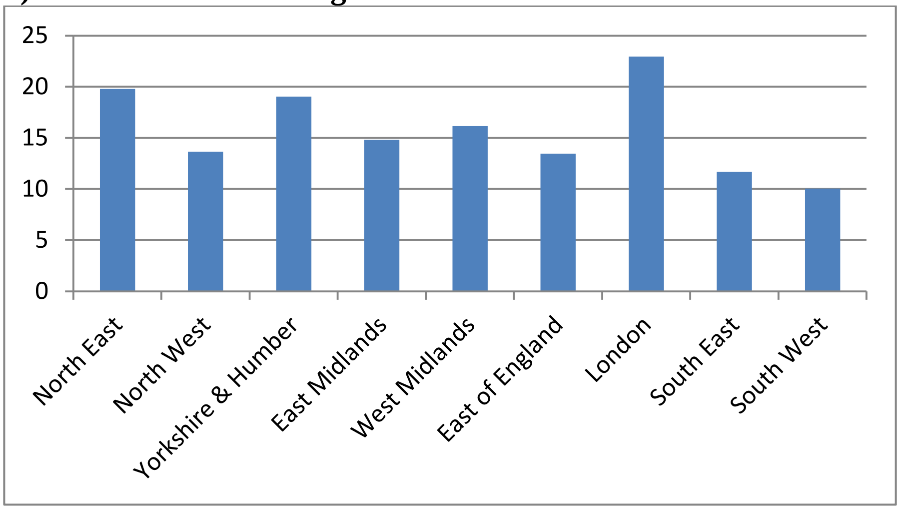
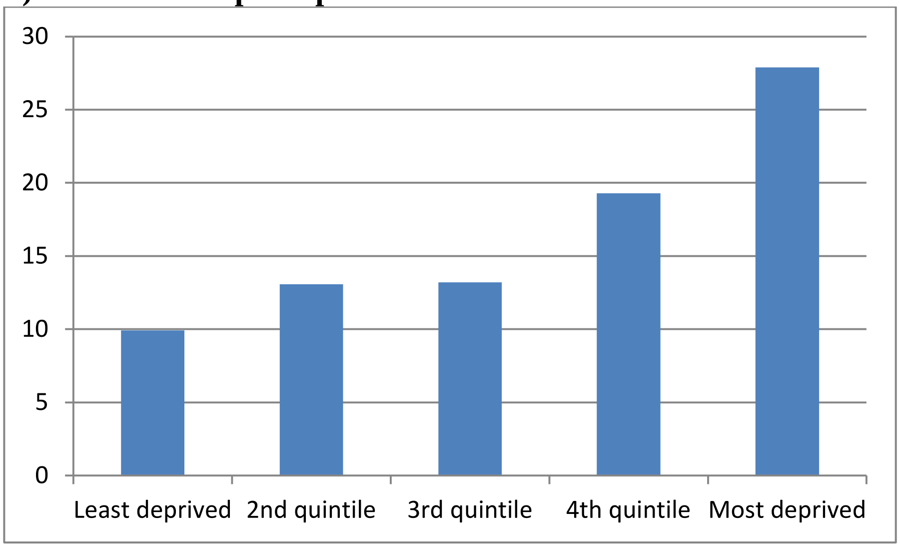


Figure 3.11. Percentage of ELSA respondents who do not have access to a car or van when needed, but have access as passengers only in 2016–17

a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator

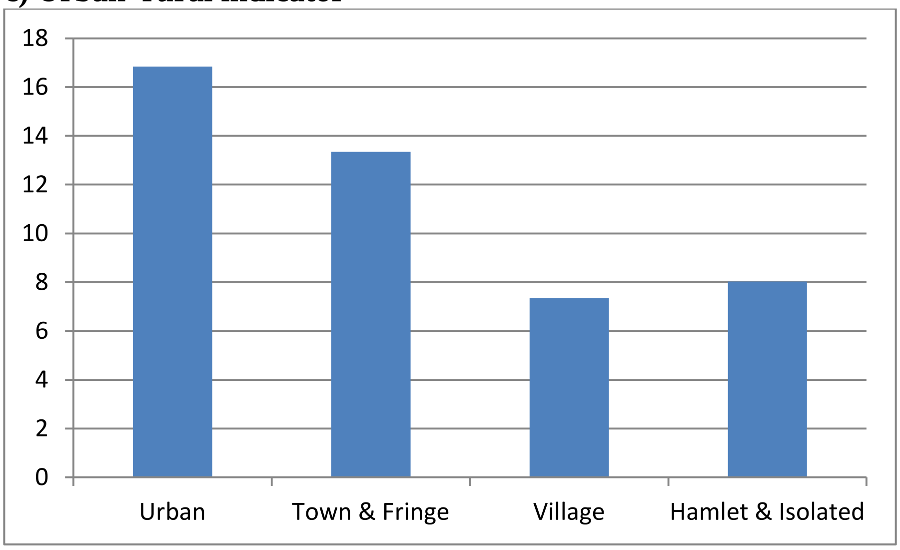
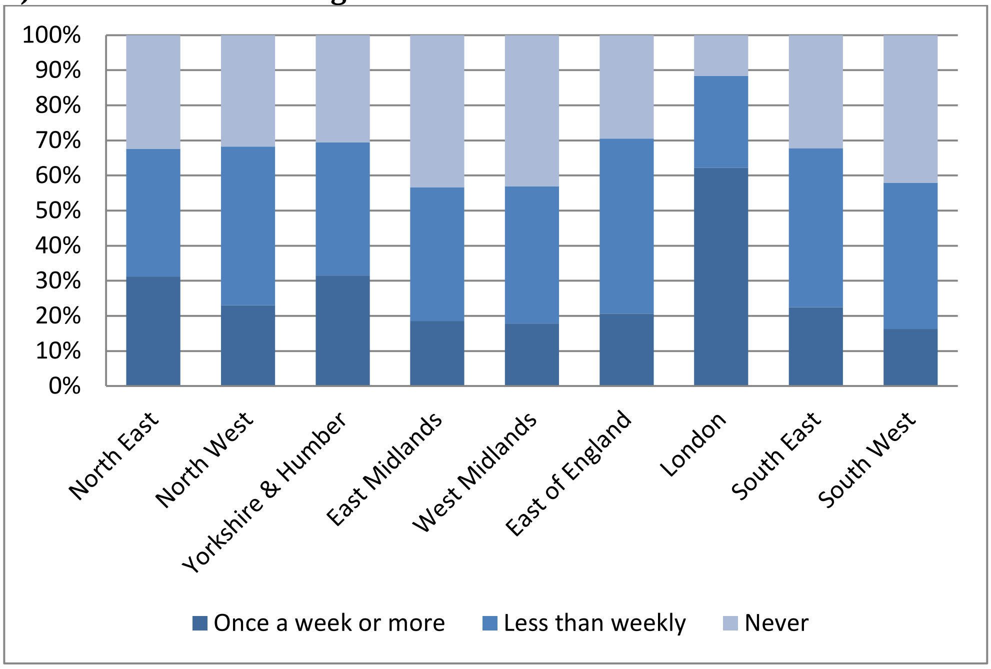
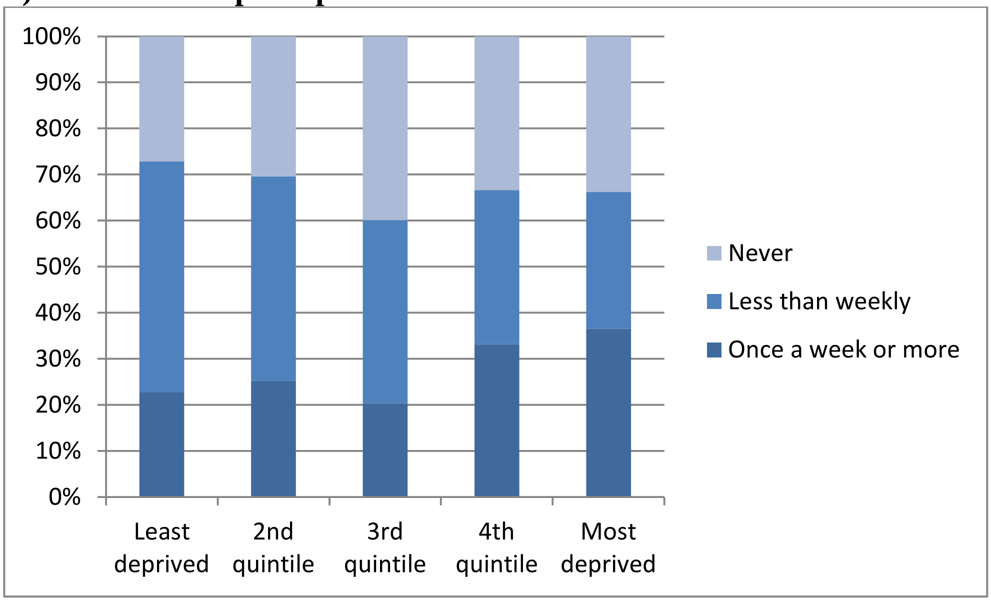


Figure 3.12. Percentage of respondents using public transport at least weekly, less than weekly and never, by area type in 2016–17

a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator

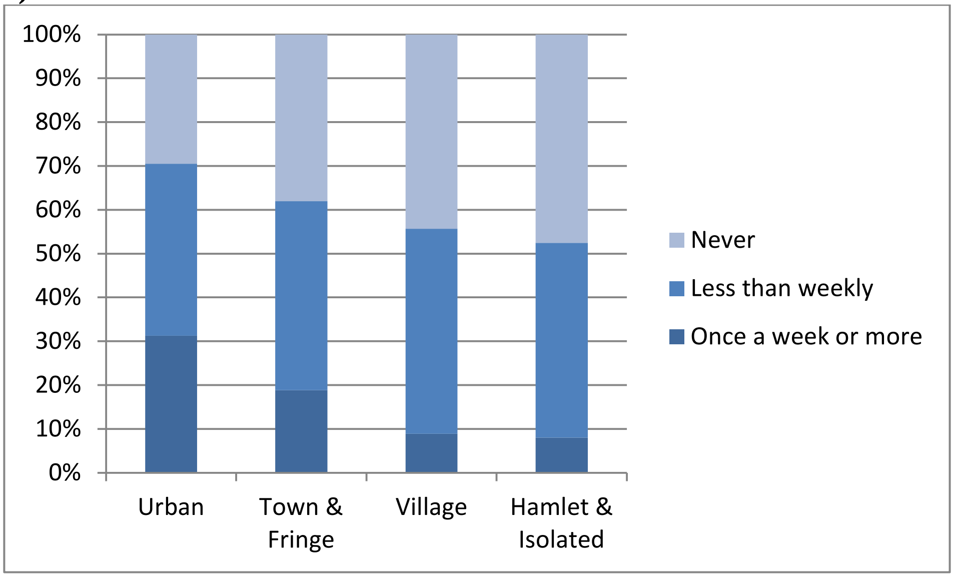
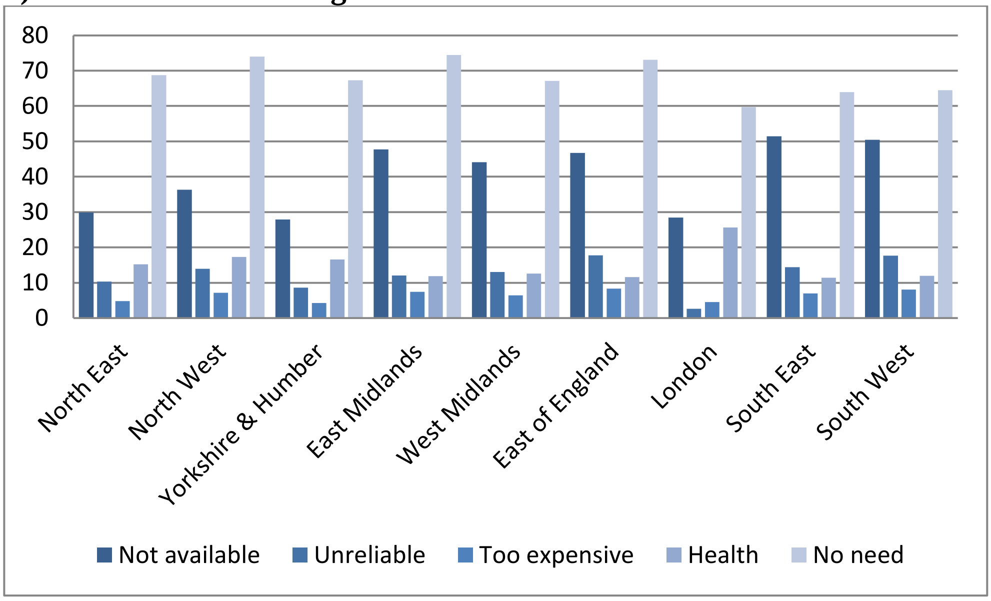
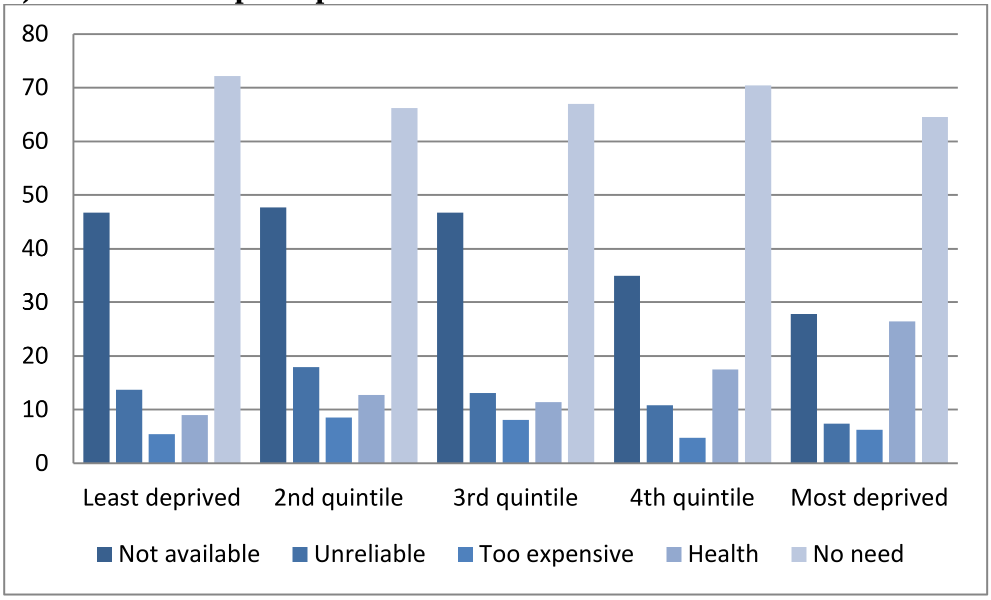


Figure 3.13. Percentage of respondents reporting reasons for not using public transport, by area type in 2016–17

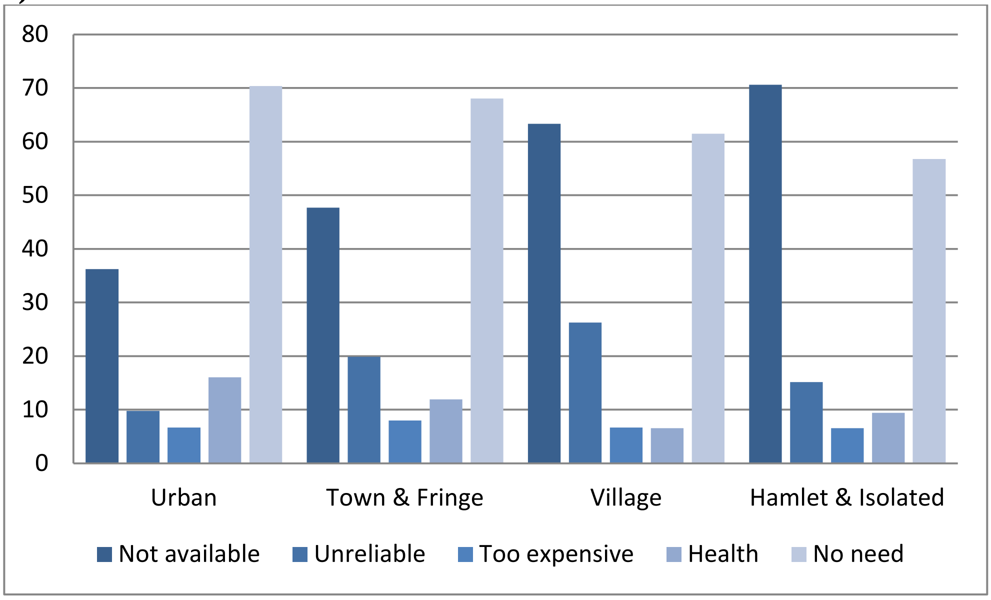
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator



Well-being

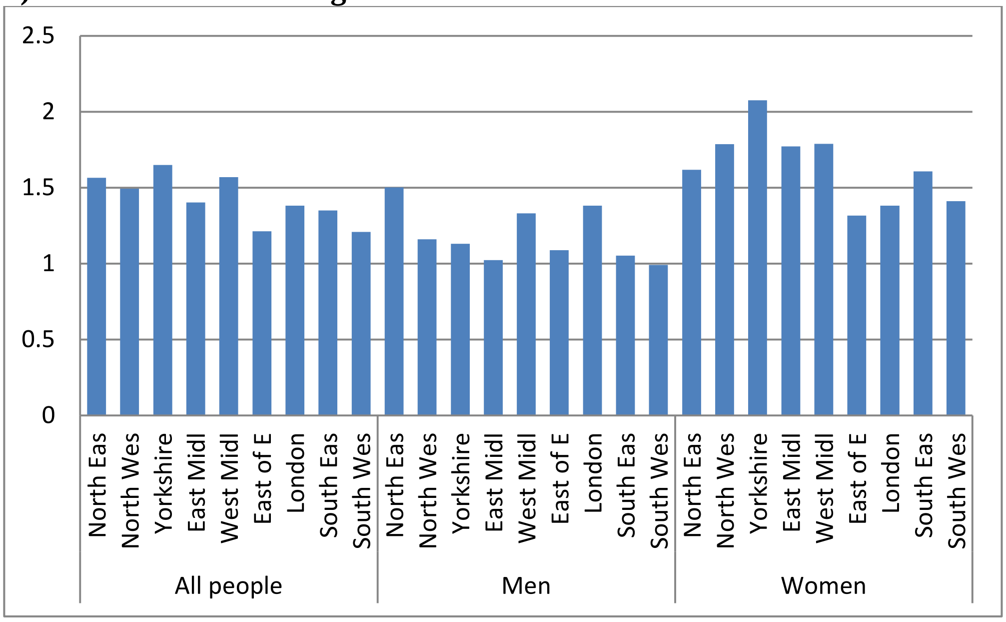
Figure 3.14 shows mean CES-D scores by area type in 2016–17. Across all regions, women report significantly higher levels of depression than men. Looking at all older people, levels of depression are seemingly highest in the northern areas of England, and lowest in the southern areas. Looking at Figure 3.14(a) by gender, this appears to be true for women to a greater extent than for men. The highest depression scores are reported among women living in Yorkshire and the Humber, and the lowest are reported among men living in the South West, East Midlands and South East.

There is a clear gradient of increasing depression scores as levels of deprivation rise. Although women, again, consistently report higher levels of depression than men regardless of their level of deprivation, the highest levels of depression are found among those living in the most deprived areas of England. Women living in the areas categorised as falling into the two most deprived quintiles report depression scores at least twice as high as men living in areas falling within the two least deprived quintiles.

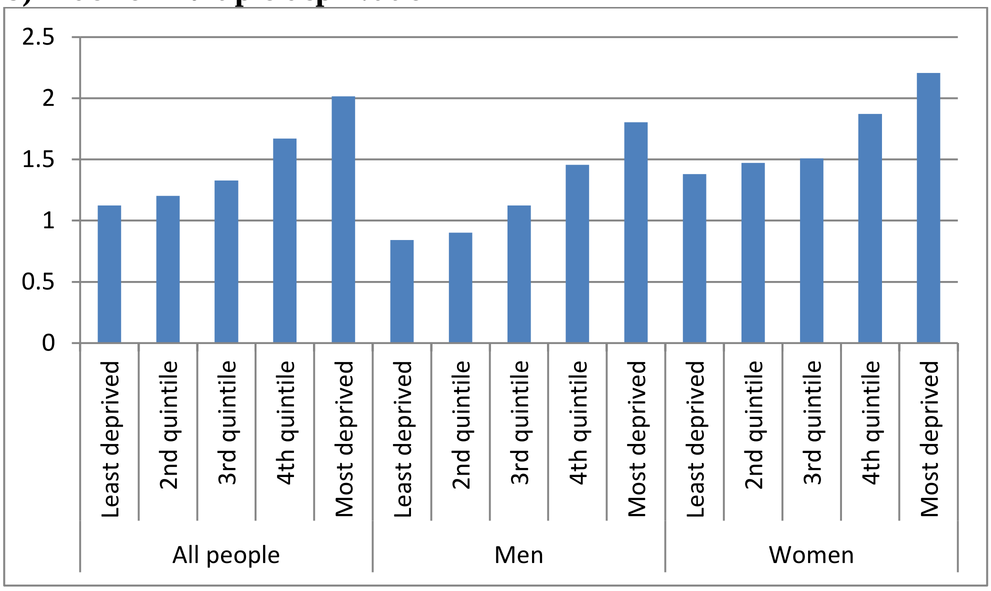
For all older people, there is a decline in depression scores as areas become more rural, but examining the trend by gender shows that this gradient is driven by women rather than men. While the highest levels of depression among men are reported in the most urban regions of England, levels remain similar regardless of how urban or rural the location is. Among women, depression scores steadily decline as areas become more rural.

Figure 3.14. Mean CES-D scores by area type in 2016–17

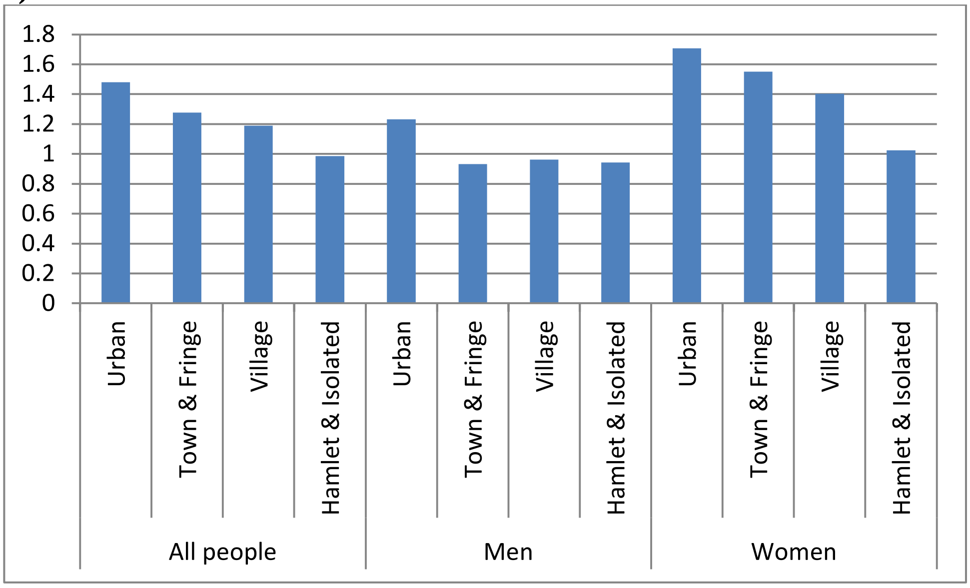
a) Government office region



b) Index of multiple deprivation



c) Urban–rural indicator



3.4.2 Summary of findings

Government office region

The cross-sectional tables presented within Appendix 3A and cited in Section 3.4.1 show that in 2016–17 there are differences in social and economic characteristics for older people on the basis of the region of England in which individuals live. Most noticeably, living in the south of England is associated with better outcomes compared with the north. This is most notable in terms of wealth, with older people in all areas in the south of England reporting much higher levels of wealth than those the north, where the highest proportion of poorest people live. This effect is also apparent in terms of working after the SPA, with people living in the south of England more likely to work after the SPA than those living in northern regions. Older people living in southern regions of England also have higher rates of social engagement than those in northern regions, with those in the Midlands areas falling in between. London is often an exception to findings that are otherwise similar across other regions. For example, London has the highest proportion among all regions of England of older residents falling into the wealthiest category, but also the second highest proportion of people who fall into the poorest wealth quintile. London also has the lowest percentage of retired individuals, as well as the highest percentage of people who are long-term ill, unemployed or looking after the home or family. People living in London are the most likely to have no access to a car when needed, but they are also the most likely to be frequent users of public transport.

Index of multiple deprivation

More deprived areas are marked by poorer social characteristics. The proportion of married older people declines with increasing deprivation, and the proportion of those who are separated or divorced increases. As expected, wealth declines sharply with increasing area deprivation, with over half of older people living in the most deprived areas falling into the poorest wealth quintile. People living in deprived areas are more likely than those in less deprived areas to be working in a poor quality employment. Social and civic engagement, volunteering and cultural engagement also decline as deprivation increases. As would be expected, depression scores increase as deprivation increases.

Urban–rural indicator

People aged 50 or older living in rural areas generally observe better socio-demographic and socio-economic characteristics than those living in more urban areas. Older people in rural areas are more likely to be married than those in urban areas, and urban areas have the highest proportion of people who are divorced or separated. While wealth quintiles are reasonably evenly distributed among those living in urban areas, almost half of those in rural areas fall into the wealthiest quintile. Older people living in urban areas are more likely than those living in rural areas to report poor working conditions. Those in urban areas also report lower rates of social and civic engagement, cultural engagement and volunteering than those in rural areas. This is perhaps surprising, as urban areas should have greater opportunity for such activities in close proximity. However, while public transport use declines as areas become more rural, the rate of people with access to a car when needed is also highest among those in rural areas.

3.5 Area effects on changes in inequality over a 14-year period (2002–03 to 2016–17)

In this section, we use mixed models to examine how social and well-being outcomes vary over time and whether the changes observed vary on the basis of area type. Analyses are based on 3,573 core sample members at wave 1 and use eight repeated measurements of the outcomes of interest.

We focus on two of the definitions of area type: area as characterised by quintiles of the IMD and area as characterised by the urban/rural indicator. Here, both indicators of area type are included as binary predictor variables: IMD is dichotomised into an optimal versus suboptimal type, with respondents living in areas within the three most deprived quintiles (suboptimal) compared with those living in areas falling within the two least deprived quintiles (optimal). The urban and rural indicator used previously has been recoded so that ‘urban’ and ‘town and fringe’ are merged into one category reflecting more urban areas, and ‘hamlet and isolated’ are merged into one category for more rural areas. Models focus on several outcomes: well-being (CES-D), social, civic and cultural engagement, car and public transport access, and retirement and working beyond the SPA.

Table 3.2. Results of the growth models of area effects on outcomes over time

Outcome	Unadjusted		Adjusted	
	Intercept	Slope	Intercept	Slope
Intercept and slope (IMD*wave) coefficients for growth model predicting area effects on given outcomes				
CES-D	1.085***	–0.052***	0.694***	–0.047**
Social engagement	1.858***	–0.031***	1.267***	–0.049***
Cultural engagement	0.901***	0.000	0.676***	0.005
Contacts	1.353***	–0.020**	1.496***	–0.024*
Volunteering	0.204***	–0.005	0.087***	0.006
No car access	0.027***	0.011***	0.085***	0.009***
Use of public transport	0.257***	0.008*	0.339***	0.004
Retired	0.466***	–0.019***	0.336***	–0.017***
Working beyond SPA	0.221***	–0.014**	1.883***	–0.013*
Intercept and slope (urban–rural*wave) coefficients for growth model predicting area effects on given outcomes				
CES-D	1.192***	0.002	0.753***	0.004
Social engagement	1.693***	–0.021**	1.343***	–0.015*
Cultural engagement	0.987***	–0.001**	0.684***	–0.003*
Contacts	1.369***	0.007	1.559***	0.009
Volunteering	0.226***	0.002*	0.120***	0.001
No car access	0.040***	0.001	0.077***	0.001
Use of public transport	0.338***	–0.001	0.469***	–0.001
Retired	0.467***	0.001	0.386***	–0.002
Working beyond SPA	0.228***	0.005	1.846***	0.001

Note: ***p < 0.001; **p < 0.01; *p < 0.05. Adjusted models control for gender, age, marital status, wealth quintile and self-reported health. CES-D score ranges from 0 to 8. Social engagement score ranges from 0 to 8. Cultural engagement score ranges from 0 to 4. Number of contacts ranges from 0 to 4. Car access, public transport, retired, working beyond SPA and volunteering are binary measures.

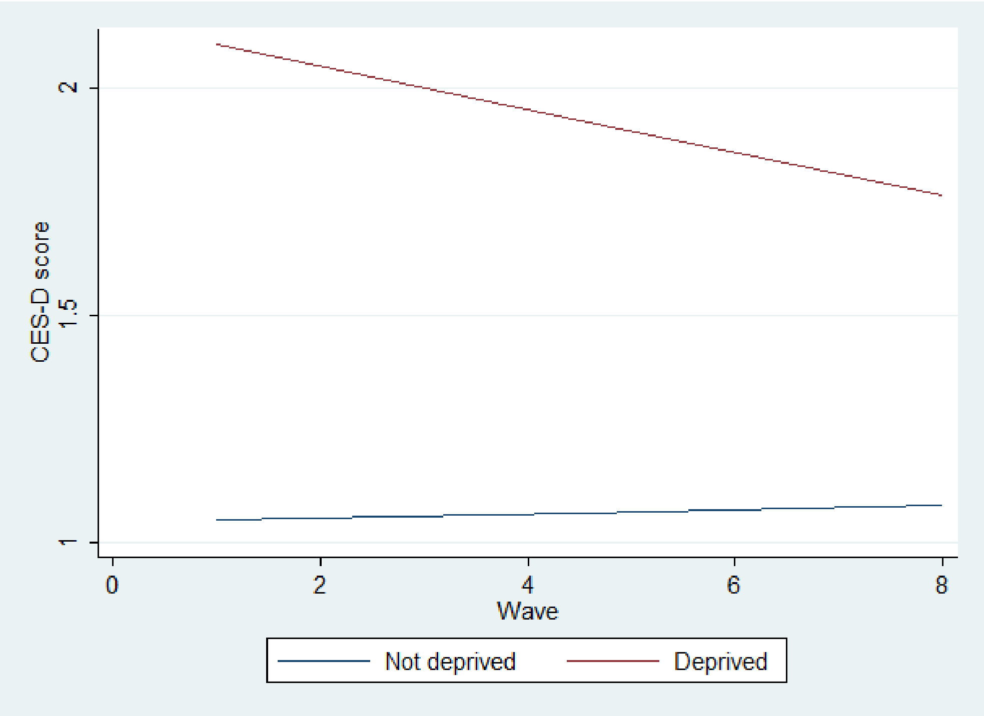
The analysis is comprised of two sets of models. In the first set, the outcomes of interest are examined in relation to IMD as a predictor variable, and in the second with the urban–rural indicator as a predictor variable. The models of IMD show the effect of belonging to areas with higher levels of deprivation compared with lower levels of deprivation, and the models using the urban–rural indicator demonstrate effects of living in urban areas compared with rural areas. The main results of the models are shown in Table 3.2. The intercept coefficients show the difference in the mean outcome at the start of the observation and are significant in each case in both the unadjusted and fully adjusted models. The slope coefficients (of wave*area type) show the change in the average level of the outcome between consecutive waves. Figures 3.15–3.20 show visual representations of some of the significant results of the fully adjusted models. Full output from the models can be found in Appendix 3A and this is referred to in the discussion of the results. Unadjusted models show the relationship between the outcome and area only, and the adjusted models control for gender, age, marital status, wealth and self-reported health.

3.5.1 Depression

Table 3.2 shows a significant relationship between the level of depression and the level of area deprivation in which individuals lived in 2002, and the effect of deprivation changes over time. The association remains significant after controlling for all socio-demographic factors. The coefficient for area on the basis of IMD is significant and positive (0.08, $p < 0.001$, Table 3A.41 in Appendix 3A), suggesting that higher area deprivation is associated with higher levels of depression. Higher CES-D scores indicate higher levels of depression, and Figure 3.15 shows a strong association between higher area-level deprivation and higher levels of depressive symptoms in the fully adjusted model. However, there is a gradual decrease in depression over time among those in more deprived areas, compared with a slight increase over time in the less deprived areas, although, in general, depression scores remain continuously much higher among individuals in deprived areas compared with those in the less deprived areas throughout the entire 14 years.

Although levels of depression are higher in urban areas than rural areas, there are no differences in changes in depression over time on the basis of whether individuals live in urban rather than rural areas.

Figure 3.15. Change in level of depression over time by IMD 2002–16



3.5.2 Civic and social engagement

In relation to deprivation, civic and social engagement is significantly lower among more deprived areas in general. It appears to decrease among those in more deprived areas at a faster rate than among those in less deprived areas, for whom, as demonstrated in Figure 3.16, levels of civic and social engagement remain reasonably stable over time. Again, as demonstrated in Figure 3.16, levels of social engagement are continuously highest among individuals from the least deprived areas, and continuously lowest among those in the most deprived areas. These results are significant in both the unadjusted and adjusted models.

The unadjusted model of civic and social engagement and urban area type shows a significant difference in levels of engagement over time on the basis of area, and this association remains significant after controlling for socio-economic and health factors, with the gap in social engagement widening over time and levels declining at a greater rate among those in urban areas.

Figure 3.16. Change in level of social engagement by IMD 2002–16

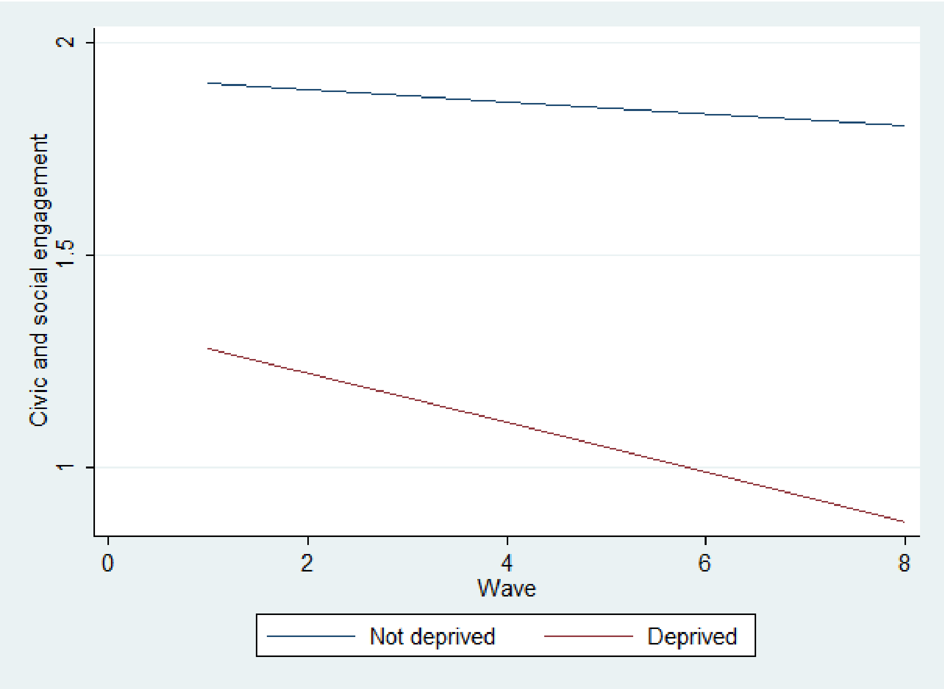
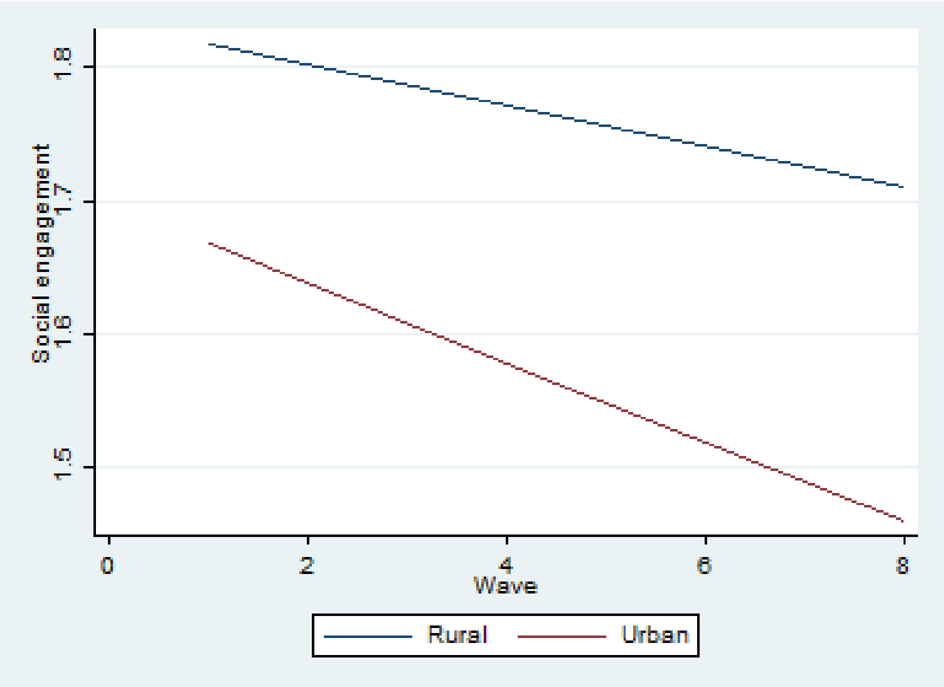


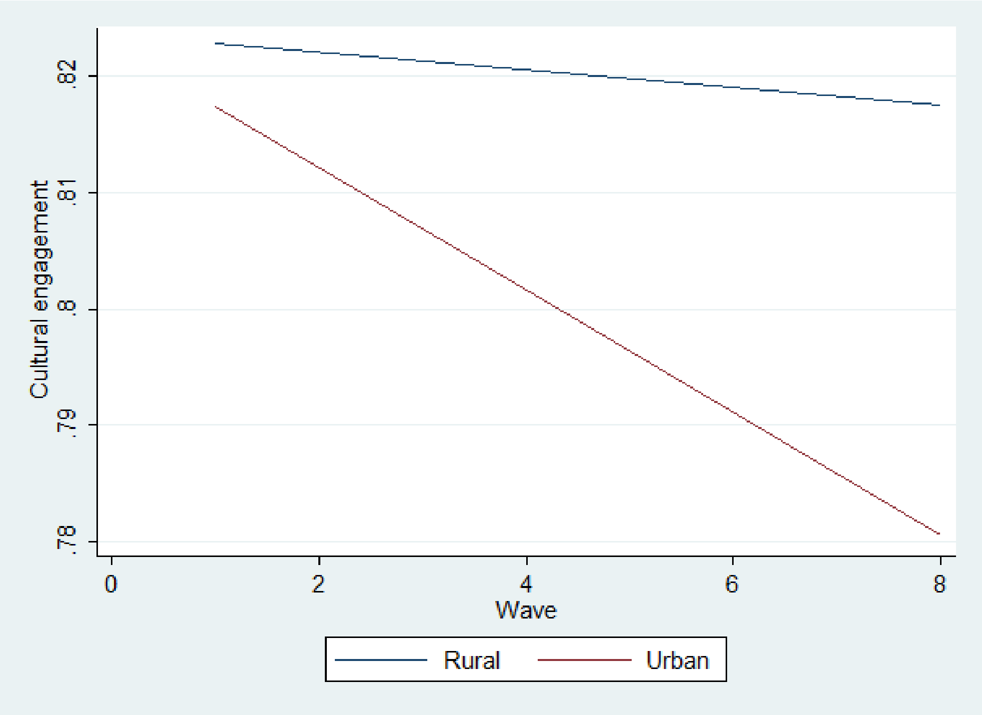
Figure 3.17. Change in level of social engagement by urban–rural indicator 2002–16



3.5.3 Cultural engagement

There is no significant difference in levels of cultural engagement over time on the basis of area deprivation, but the intercept coefficient is significant, suggesting that cultural engagement is lower in more deprived areas. There is a significant relationship between change in cultural engagement and the urban or rural nature of area, which is present in both the unadjusted and adjusted models. Here, living in a more urban area is associated with both a lower level of cultural engagement in general, and a steeper decline in cultural engagement over time, compared with those living in more urban areas.

Figure 3.18. Change in level of cultural engagement by urban–rural indicator 2002–16

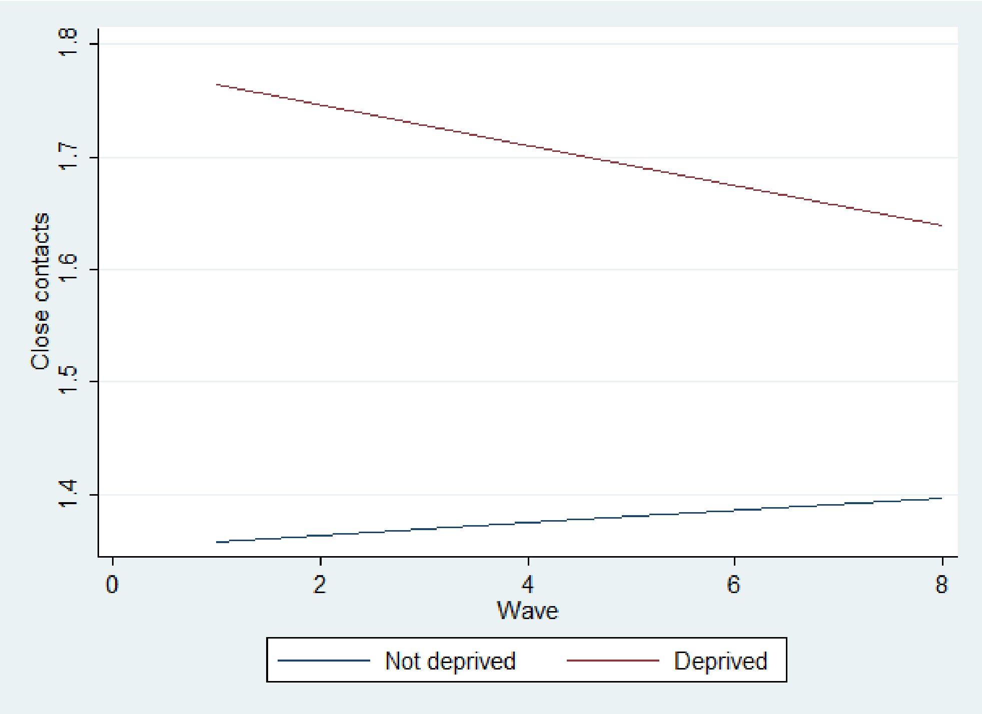


3.5.4 Close contacts

Table 3A.29 in Appendix 3A shows that higher deprivation is associated with an individual having a higher number of close social contacts (i.e. the number of children, other family or friends, met face-to-face on a regular basis). Figure 3.19 shows that those in more deprived areas continuously have a greater number of close contacts than those in less deprived areas, but those in the most deprived areas experience a significant decline in the number of contacts they have, compared with those living in the least deprived areas, who experience a slight increase over time.

While the intercept coefficient demonstrates that there is significant variation in the number of close contacts older people have on the basis of whether the area they live in is classed as urban or rural, changes in the number of contacts people have over time do not vary on the basis of how urban or rural the area they live in is.

Figure 3.19. Change in number of close contacts by IMD 2002–16



3.5.5 Volunteering

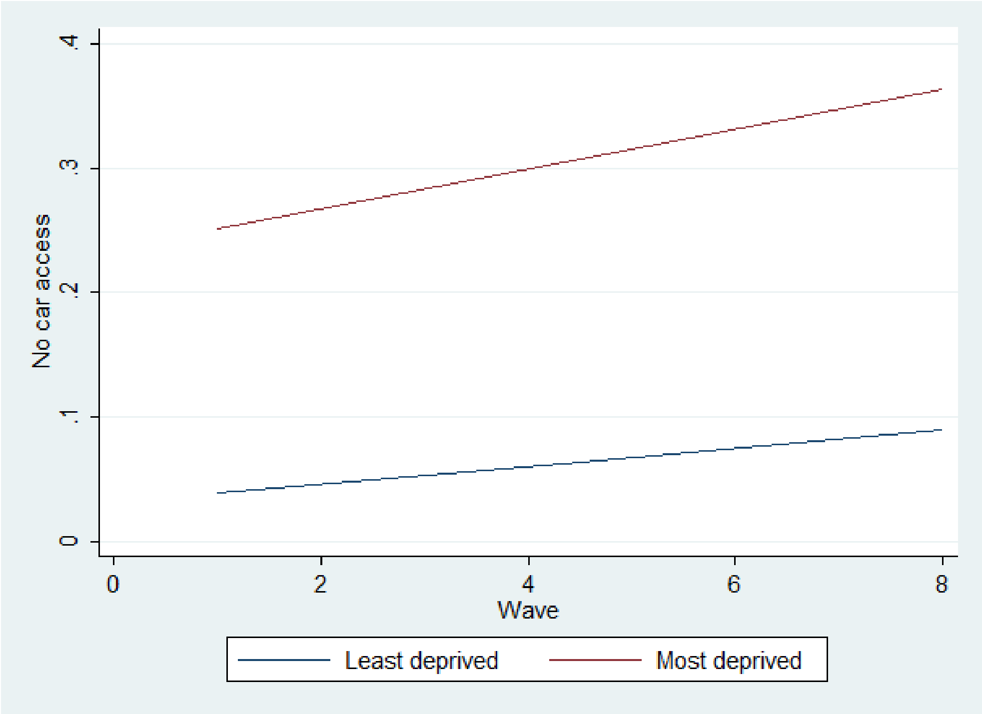
Living in more deprived areas is associated with a lower likelihood of participating in frequent volunteering (–0.09, $p < 0.05$, Table 3A.23 in Appendix 3A), as is living in a more urban area (–0.08, $p < 0.05$). However, the slope coefficient in Table 3.2 suggests that neither area deprivation nor urban versus rural residence are associated with change in the levels of volunteering over time.

3.5.6 No car access

Significant changes in car access over time are observed according to the levels of area deprivation, which persist after controlling for individual characteristics. At baseline, higher levels of area deprivation are associated with a higher probability of lacking access to a car when this is needed (0.011, $p < 0.001$). The positive association between area deprivation and lacking access to a car remained significant over time (0.009, $p < 0.01$), suggesting that the issue of lacking access to a car when this is needed persisted over the 14-year period spanning between 2002 and 2016. Figure 3.20 shows that those in more deprived areas were consistently more likely to have no car access than those in less deprived areas across the entire ELSA period.

Although the coefficient for the effect of living in an urban area is significant in both the unadjusted and adjusted models, showing that more individuals have no car access in urban areas than rural areas, the slope coefficient is not significant, suggesting changes in the proportion of individuals without car access does not change differently on the basis of whether an area is urban or rural.

Figure 3.20. Change in proportion of people without car access by IMD 2002–16



3.5.7 Public transport

Although living in more deprived areas is associated with a decreased likelihood of using public transport both before and after adjusting for individual socio-economic characteristics, the change in rates of public transport use does not vary over time on the basis of area-level deprivation.

While there is significant variation in public transport use on the basis of whether an area is urban or rural, after controlling for individual characteristics the change in public transport use over time does not vary significantly on the basis of area.

3.5.8 Retirement

Although the significant intercept coefficient in both the unadjusted and adjusted models demonstrates variation in the proportions of retired people on the basis of both area deprivation and the urban–rural indicator variable, the difference over time in retirement does not vary significantly by area type.

3.5.9 Working beyond state pension age

While the proportions of people working beyond SPA vary on the basis of both area deprivation and how urban areas are, there is no significant difference in changes in the proportions of people working beyond SPA on the basis of either definition of area type.

3.6 Migration and change in social inequality and well-being

In this section, we examine changes in health, well-being and social factors following moving homes between areas of differing levels of deprivation. A quintile version of the IMD is used as the basis for the following analyses. There were insufficient moves across urban and rural areas for the impact of such moves to be examined.

The analyses within this section use a sample of 6,107 core sample members, including refreshment sample members from all relevant waves, who have responded to at least two consecutive waves of the ELSA data across all eight waves of ELSA. The models focus on all individuals who have moved between areas with different levels of deprivation according to the IMD at any point within the ELSA data period and their outcomes compared with each other as well as non-movers. The models examine three comparisons in changes in outcomes: moving into areas of greater deprivation compared with not moving; moving into areas of lower deprivation compared with not moving; and moving into areas of greater deprivation compared with moving into areas of lower deprivation.

The impact of migration from and to different levels of deprivation is modelled using regression techniques. The models use pooled data from all waves of ELSA. Outcomes are measured at the wave at which the respondent reports having moved home, and control variables are taken from the wave prior to their move. Non-movers are taken from the two middle waves of ELSA, so that they are measured at the mid-point of the ELSA data (outcomes measured at wave 5 (2010–11) and their baseline predictors at wave 4 (2008–09). In the few cases where respondents reported moving more than once, their first move was included in the analysis. The models are constructed using a forward stepwise approach, so that the contribution of each of the control variables can be examined in relation to the association between outcomes and migration. Baseline outcomes are included as covariates so that the reported effects demonstrate the change in outcome scores for those who move compared with those who do not move.

Table 3.3 shows the number of respondents moving between each of the waves of ELSA on the basis of whether their move leads to an increase in deprivation, a decrease in deprivation, or no change in deprivation.

The majority of individuals who move homes between two consecutive waves of ELSA do not see a subsequent change in the level of deprivation. Relatively similar numbers of respondents experience a decline and an increase in their level of deprivation.

Table 3.3. Frequencies of respondents moving between waves in relation to associated change in IMD quintile

Moved home between waves	No change in IMD	Becomes more deprived	Becomes less deprived
Wave 1 to 2	84	49	36
Wave 2 to 3	129	13	25
Wave 3 to 4	74	50	49
Wave 4 to 5	103	59	60
Wave 5 to 6	108	49	66
Wave 6 to 7	151	50	67
Wave 7 to 8	147	87	111
Total	796	357	414

3.6.1 Change in well-being and engagement relative to changes in area deprivation

Table 3.4 shows the impact of moving between areas with different levels of deprivation on the well-being outcome of interest (CES-D). The 'model 1' column shows results of the models adjusting only for baseline outcome scores, and the 'model 2' column shows the results of the fully adjusted models. Step-wise models were run, the results of which are discussed in the following sections, and the full tables for which can be found in Appendix 3A.

Table 3.4. Well-being and migration: change in CES-D score (and standard error) between two waves relative to changes in deprivation

	CES-D	
	Model 1	Model 2
Becomes more deprived versus not moving	0.345 (0.11)*	0.092 (0.23)
Becomes less deprived versus not moving	–0.217 (0.10)*	–0.076 (0.23)
Becomes more deprived versus becomes less deprived	0.612 (0.13)**	0.421 (0.19)*

Note: Model 1 is adjusted for baseline outcome only. Model 2 is adjusted for baseline outcome, gender, age, marital status, wealth quintile and self-reported health.

Before adjusting for any socio-demographic factors, compared with those who do not move, moving into a more deprived area is associated with a significant worsening in depression score between waves, and moving into a less deprived area is associated with a significant improvement in depression score. Adjusting for gender, age and marital status alone does not change the significant association between change in deprivation and depression. However, once baseline wealth is included in the model, the association between both changes in deprivation become non-significant, although the direction of the effects remains the same.

When comparing the effect of moving into higher levels of deprivation relative to moving into lower levels, compared with moving into areas of lower deprivation, moving into an area with higher deprivation is associated with a significant worsening in depressive symptoms, and this significant relationship persists even after accounting for the effects of wealth and health.

3.6.2 Change in social and cultural engagement in relation to changes in area deprivation

Social and civic engagement, defined as belonging to various social and civic organisations, increases among those who move relative to those who do not, regardless of whether their level of deprivation increases or decreases. Controlling for gender, age and marital status does not alter this relationship, but controlling for wealth leads to this association becoming non-significant. When compared with those who move into areas of lower deprivation, those moving into areas with higher deprivation still see an increase in social and civic engagement scores, and this persists even after accounting for both wealth and self-reported health.

As for social and civic engagement, in the models adjusted only for baseline cultural engagement, all types of moving are associated with a significant increase in cultural engagement. Relative to those who do not move at all, moving into areas of either higher or lower deprivation is associated with an increase in the participation of cultural activities. The coefficient is slightly larger for those moving into areas of lower deprivation than higher. Once wealth is included in the model, the change in cultural engagement becomes non-significant for those who move into areas of lower deprivation, but remains significant for those who move into areas of greater deprivation. Finally, relative to those who move and experience a decline in area-level deprivation, those who move and experience an increase in deprivation have a significant increase in cultural engagement, and this association persists after controlling for all baseline socio-demographic and health variables.

Table 3.5. Social and civic and cultural engagement and migration: change in level of engagement between two waves relative to changes in deprivation

	Social and civic engagement		**Cultural engagement**	
	Model 1	Model 2	Model 1	Model 2
Becomes more deprived versus not moving	0.832 (0.06)***	0.143 (0.15)	0.269 (0.04)***	0.190 (0.09)*
Becomes less deprived versus not moving	0.182 (0.06)*	0.021 (0.15)	0.290 (0.05)***	0.040 (0.09)
Becomes more deprived versus becomes less deprived	0.248 (0.09)*	0.199 (0.09)*	0.176 (0.07)*	0.134 (0.06)*

Note: Model 1 is adjusted for baseline outcome only. Model 2 is adjusted for baseline outcome, gender, age, marital status, wealth quintile and self-reported health.

Overall, the results in Tables 3.4 and 3.5 suggest that moving to areas of higher deprivation is worse for well-being than not moving at all, and moving to areas of lower deprivation is better for well-being than not moving at all. However, the non-significant effects after accounting for individual wealth suggest that the relationship between wealth and selection into migration explains a large proportion of the apparent effect of well-being. However, when comparing CES-D scores among those who move to more deprived areas in comparison with those who move to less deprived areas, the association with worsening depression persists after controlling for wealth and, finally, self-reported health.

In contrast to the models of well-being, moving into areas of either higher or lower deprivation is associated with an increase in levels of both social and civic engagement and of cultural participation when compared with not moving at all. Those moving into more deprived areas see a better improvement in scores than those moving into less deprived areas, and effects remain significant after accounting for all socio-demographic and health factors. While this may be explained by the fact that areas of higher deprivation are more likely to be more urbanised, therefore leading to an increased ease of accessing local organisations and cultural activities, there may be other factors affecting results. For example, there is a likelihood that moving between areas in later life is driven by retirement, in which case people have a greater amount of time in which to participate in cultural activities, regardless of area type.

3.7 Conclusions

Previous research has shown clear links between area deprivation and population density, and poorer physical and mental health and well-being. Little previous work has focused on social inequalities as outcomes of area. The research presented within this chapter has reinforced the understanding that living in areas that are poorer or more urban in nature has associations with poorer outcomes, in terms of mental well-being, as well as social outcomes, such as work and retirement, social and cultural engagement, and transport use. These inequalities last throughout later life, often widening as individuals age.

In Section 3.4, we used GORs, the IMD and an urban–rural indicator to examine the question of how social inequalities varied on the basis of area type, using cross-sectional data taken from wave 8 of ELSA in 2016–17. As hypothesised, the cross-sectional analyses presented within the chapter showed that in 2016–17, areas characterised by higher levels of deprivation and those that were more urban in nature were associated with a range of poorer outcomes among people aged 50 and over. The analyses also demonstrated that outcomes were generally better for older people living in the south of England, and worst among those living in northern regions, particularly the North East.

In terms of working and retirement, London had the lowest rate of retired individuals of all GORs, and the highest proportion of people who reported they were either long-term sick, unemployed or looking after home or family. The most deprived and the most urban areas reported the lowest rates of retirement, and the highest rates of people reporting as long-term sick, unemployed or looking after home or family, particularly among women. However, among people who were of SPA or above, higher proportions continued to work in less deprived and more rural areas. This could be due to selection effects of people in wealthier areas having better health and therefore being able to work later in life, as well as a higher likelihood of people in wealthier areas working in better conditions and more enjoyable jobs. Accordingly, living in more deprived and urban areas was also associated with an increased likelihood of participating in a poor quality employment.

There was a strong association between higher social engagement among those living in areas in the south of England and lower among those in the north. Social engagement decreased as areas became more deprived and more urban. This was also true for participation in volunteering and engagement in cultural activities among both men and women.

The majority of older people in 2016–17 had access to a car when needed. London reported the highest proportion of people without access, but simultaneously reported the highest proportion of frequent public transport users. Car access declined as deprivation increased. Public transport was used similarly, regardless of area deprivation. However, public transport was used considerably less among older people living in more rural areas compared with urban. In contrast, almost all people living in the most rural areas had access to a car when needed, which was not the case for those living in urban areas. People living in deprived and more urban areas are more likely to report poor health as a reason for not using public transport than those in less deprived areas and rural areas.

In line with previous research on the topic, mean depression scores were highest among those in the most deprived areas, as well as those living in more urban areas. Scores among women were consistently higher than among men, demonstrating that women in the most deprived areas have the poorest mental well-being of all older people. On average, those in the south of England reported lower depression scores than those in the north of England.

In Section 3.5, we aimed to examine whether changes in mental and social well-being over time varied on the basis of area type. Longitudinal analyses demonstrated that declines in several of the social outcomes of interest occurred more among those living in areas that were either deprived or more urban compared with those living in less deprived or rural areas. Rates of social engagement were consistently higher across all waves of ELSA among people from less deprived areas, and while levels of engagement reduced over time for all older people, this occurred at a faster rate among individuals living in the most deprived areas. There was also a much faster decline in rates of social engagement over time among older people living in urban areas than those in rural areas. People living in deprived areas also saw a decline in close contacts over time, while those in the least deprived areas saw a slow increase. The proportion of people without car access remains higher among those in deprived areas across the study period, and although having no car access increases for all older people over time, this change happens more so among those in deprived areas. When examined over the study period, depression scores remained consistently higher among people living in more deprived areas, but depression scores among people in deprived areas decreased over time, compared with a very slight increase among those in less deprived areas.

In Section 3.6, we considered the potential effects of migration, focusing on individuals who moved and experienced a change in their area level of deprivation, in order to examine whether a change in area-level deprivation was associated with a change in outcomes. This shows that, relative to not moving at all, moving to areas with higher levels of deprivation is damaging to mental well-being, and moving to areas of lower deprivation is beneficial to mental well-being, although this association was mostly explained by the relationship between wealth and selection into migration. Moving to areas of either higher or lower levels of deprivation was associated with an increase in social engagement when compared with not moving at all, which may be a short-term effect of being in a new environment.

The findings within this chapter reinforce many of the theories regarding the association between living within poorer neighbourhoods and poorer social and well-being outcomes. Later retirement in poorer and more urban areas may be reflecting the fact that people cannot afford to retire, especially considering the higher proportion of people working in a poor quality employment in these areas. Lower social engagement, cultural engagement and volunteering among more deprived and more urban areas may be reflecting several mechanisms through which area relates to social outcomes. Social networks that are contained within small deprived areas may lead to reduced opportunity to access social activities, and this may be further affected by the higher likelihood of poorer health and poorer mobility among people living in poorer areas (Bowling and Stafford, 2007), as well as lower levels of wealth and personal resources available to access social activities. As reported with previous research, higher depression scores among those in more deprived and urban areas may be a result of the fewer opportunities for those individuals with fewer personal and social resources (Kubzansky et al., 2005; Marshall et al, 2014).

It might be especially important to consider area effects on social and well-being outcomes among older populations as they may be particularly embedded within their areas and therefore more prone to the influence of area on their outcomes as they age. If social inequalities among older people are to be successfully addressed, policy needs to place a strong focus on deprived and urban areas.

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Appendix 3A

The tables presented in this appendix correspond to the cross-sectional analyses in Section 3.4.

Table 3A.1. Age group by GOR in 2016–17

	Age in 2016–17							
	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
North East	14.2	19.4	14.5	15.7	11.2	10.3	8.9	5.9
North West	16.6	15.7	15.9	18.4	13.0	9.2	5.5	6.2
Yorkshire and the Humber	11.9	20.0	15.4	19.0	11.6	10.9	6.2	5.0
East Midlands	9.6	13.8	23.6	16.4	14.3	9.3	6.2	6.7
West Midlands	12.8	19.1	14.6	15.6	12.9	9.4	8.6	6.9
East of England	11.8	19.0	15.1	17.3	12.5	11.5	6.9	5.9
London	12.7	21.6	18.6	13.0	12.5	8.6	8.0	5.1
South East	10.4	20.8	15.2	17.4	13.7	9.3	6.8	6.4
South West	14.4	16.8	13.2	16.0	14.4	9.5	7.9	7.8

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.019$; women $p = 0.078$.

Table 3A.2. Age group by IMD in 2016–17

	Age in 2016–17							
	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Least deprived	12.6	17.7	15.7	17.0	13.2	10.6	7.0	6.3
Second quintile	10.9	17.4	16.6	18.4	13.4	10.2	6.5	6.5
Third quintile	11.2	19.7	16.8	16.0	12.9	9.1	7.6	6.8
Fourth quintile	15.4	17.8	15.0	14.9	14.4	9.5	7.7	5.3
Most deprived	13.9	21.5	16.5	16.3	10.4	8.8	6.6	6.1

Note: Test of significant differences by area type: all people $p = 0.084$; men $p = 0.032$; women $p = 0.692$.

Table 3A.3. Age group by urban–rural indicator in 2016–17

	Age in 2016–17							
	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+
Urban	13.4	18.6	15.9	16.5	12.8	9.6	7.2	6.0
Town and fringe	8.1	18.1	18.1	16.1	14.2	9.9	7.9	7.7
Village	11.1	20.3	13.9	18.2	13.5	10.7	6.1	6.3
Hamlet and isolated	14.8	14.3	20.4	16.9	13.5	9.2	5.1	5.8

Note: Test of significant differences by area type: all people $p = 0.069$; men $p = 0.138$; women $p = 0.534$.

Table 3A.4. Marital status by GOR in 2016–17

	Marital status in 2016–17					
	Married	Cohabiting	Single	Widowed	Divorced	Separated
North East	65.1	7.1	4.2	12.3	8.9	2.5
North West	60.5	5.6	6.9	14.8	10.8	1.4
Yorkshire and the Humber	66.2	5.0	6.8	10.5	10.5	1.0
East Midlands	66.5	5.4	4.2	13.8	9.4	0.7
West Midlands	60.5	7.4	7.0	13.1	9.7	2.4
East of England	66.4	8.1	4.5	9.9	10.2	0.9
London	60.7	5.4	11.6	11.1	8.3	3.0
South East	64.8	5.3	4.9	12.1	10.7	2.3
South West	68.0	6.0	5.9	10.8	8.9	0.3

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.5. Marital status by IMD in 2016–17

	Marital status in 2016–17					
	Married	Cohabiting	Single	Widowed	Divorced	Separated
Least deprived	72.7	4.8	3.5	10.2	7.6	1.4
Second quintile	69.6	6.0	4.0	11.9	7.7	0.9
Third quintile	66.1	6.6	5.2	11.9	9.0	1.2
Fourth quintile	54.7	6.8	10.7	14.5	11.3	2.1
Most deprived	50.5	6.5	10.9	12.5	16.4	3.2

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.6. Marital status by urban–rural indicator in 2016–17

	Marital status in 2016–17					
	Married	Cohabiting	Single	Widowed	Divorced	Separated
Urban	61.8	5.9	7.1	12.6	10.8	1.9
Town and fringe	69.5	6.2	4.2	11.9	7.3	0.9
Village	72.8	6.4	4.0	9.0	7.3	0.6
Hamlet and isolated	72.1	7.8	2.9	11.2	5.3	0.7

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.7. Wealth quintile by GOR in 2016–17

	Wealth quintile in 2016–17				
	Poorest quintile	Second quintile	Third quintile	Fourth quintile	Wealthiest quintile
North East	29.3	36.9	16.9	10.2	6.8
North West	22.0	31.1	20.6	15.1	11.3
Yorkshire and the Humber	24.8	34.5	19.1	14.3	7.4
East Midlands	24.0	25.5	22.5	15.1	12.9
West Midlands	20.0	30.9	21.4	17.1	10.6
East of England	16.0	9.6	20.7	27.4	26.3
London	27.7	3.4	11.9	19.0	38.0
South East	12.9	7.7	21.3	28.5	29.6
South West	13.5	17.1	23.9	23.2	22.3

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.8. Wealth quintile by IMD 2016–17

	Wealth quintile in 2016–17				
	Poorest quintile	Second quintile	Third quintile	Fourth quintile	Wealthiest quintile
Least deprived	5.3	9.6	18.5	29.9	36.7
Second quintile	11.5	15.3	25.6	24.3	23.4
Third quintile	17.2	21.6	22.4	19.6	19.2
Fourth quintile	28.9	28.3	21.4	14.1	7.4
Most deprived	51.8	31.4	7.7	5.1	4.0

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.9. Wealth quintile by urban–rural indicator in 2016–17

	Wealth quintile in 2016–17				
	Poorest quintile	Second quintile	Third quintile	Fourth quintile	Wealthiest quintile
Urban	22.3	21.7	20.4	18.9	16.8
Town and fringe	13.2	21.6	22.7	21.9	20.5
Village	13.9	10.9	16.3	26.2	32.7
Hamlet and isolated	13.0	5.4	14.7	19.2	47.6

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.10. Economic activity by GOR and gender in 2016–17

	Economic activity in 2016–17								
	All people			Men			Women		
	Retired	Empl.	Other	Retired	Empl.	Other	Retired	Empl.	Other
North East	50.9	38.5	10.6	50.6	40.7	8.7	51.2	36.6	12.2
North West	52.2	38.0	9.7	48.7	43.9	7.4	55.3	32.9	11.8
Yorkshire and the Humber	52.5	36.3	11.3	48.4	43.2	8.4	55.8	30.5	13.6
East Midlands	54.9	36.3	8.8	49.0	44.7	6.4	60.7	28.1	11.2
West Midlands	50.2	38.2	11.6	50.2	42.2	7.7	50.3	34.5	15.3
East of England	52.0	38.8	9.2	54.7	38.9	6.4	49.8	38.7	11.5
London	46.7	39.3	14.0	39.8	48.4	11.8	54.4	29.3	16.4
South East	50.2	43.3	6.5	46.7	48.5	4.8	53.2	38.8	8.1
South West	53.2	39.3	7.5	52.3	44.5	3.2	54.1	34.5	11.5

Note: Test of significant differences by area type: all people $p = 0.020$; men $p = 0.604$, women $p = 0.006$.

Table 3A.11. Economic activity by IMD and gender in 2016–17

	Economic activity in 2016–17								
	All people			Men			Women		
	Retired	Empl.	Other	Retired	Empl.	Other	Retired	Empl.	Other
Least deprived	40.1	53.4	6.5	45.1	51.6	3.3	35.6	55.0	9.4
Second quintile	37.5	54.8	7.7	42.5	52.5	5.0	33.0	56.9	10.1
Third quintile	42.5	49.7	7.8	50.4	45.1	4.5	35.5	53.8	10.7
Fourth quintile	41.1	49.6	9.4	46.7	46.2	7.1	35.9	52.7	11.4
Most deprived	32.0	46.6	21.5	35.0	45.0	20.0	29.2	48.0	22.8

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.12. Economic activity by urban–rural indicator and gender in 2016–17

	Economic activity in 2016–17								
	All people			Men			Women		
	Retired	Empl.	Other	Retired	Empl.	Other	Retired	Empl.	Other
Urban	51.2	38.4	10.4	47.8	44.2	8.0	54.3	33.1	12.6
Town and fringe	55.3	36.8	7.8	56.3	41.0	2.8	54.6	33.5	11.9
Village	50.7	41.8	7.5	49.7	45.8	4.5	51.7	38.0	10.3
Hamlet and isolated	42.6	50.9	6.5	38.0	55.5	6.5	46.7	46.7	6.6

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.068$.

Table 3A.13. Of respondents of SPA and over, the percentage still working by GOR and gender in 2016–17

	Percentage of people of SPA and above still working in 2016–17		
	All people	Men	Women
North East	8.5	11.2	6.2
North West	10.9	15.6	7.5
Yorkshire and the Humber	10.3	13.3	8.1
East Midlands	10.4	12.6	8.8
West Midlands	11.6	16.1	7.5
East of England	12.3	14.0	10.8
London	12.7	14.2	11.6
South East	15.0	17.9	12.7
South West	11.2	13.9	8.9

Note: Test of significant differences by area type: all people $p = 0.076$; men $p = 0.913$; women $p = 0.016$.

Table 3A.14. Of respondents of SPA and above, the percentage still working by IMD and gender in 2016–17

	Percentage of people of SPA and above still working in 2016–17		
	All people	Men	Women
Least deprived	13.5	16.9	10.6
Second quintile	12.7	17.0	9.1
Third quintile	12.7	17.0	9.4
Fourth quintile	10.8	10.4	11.0
Most deprived	7.3	8.5	6.4

Note: Test of significant differences by area type: all people $p = 0.001$; men $p = 0.000$; women $p = 0.048$.

Table 3A.15. Of respondents of SPA and above, the percentage still working by urban–rural indicator and gender in 2016–17

	Percentage of people of SPA and above still working in 2016–17		
	All people	Men	Women
Urban	10.9	13.5	8.8
Town and fringe	12.2	16.5	9.0
Village	14.3	17.1	11.9
Hamlet and isolated	23.4	29.3	18.8

Note: Test of significant differences by area type: all people $p = 0.226$; men $p = 0.769$; women $p = 0.011$.

Table 3A.16. Of working respondents, the percentage in poor quality employment by GOR and gender in 2016–17

	Percentage of workers in poor quality employment in 2016–17		
	All people	Men	Women
North East	40.5	29.4	50.7
North West	33.8	30.8	37.6
Yorkshire and the Humber	35.3	37.3	32.8
East Midlands	40.3	37.8	43.6
West Midlands	41.0	33.9	48.4
East of England	37.9	40.2	36.1
London	35.7	41.4	26.3
South East	32.1	30.9	33.5
South West	34.2	32.5	36.5

Note: Test of significant differences by area type: all people $p = 0.446$; men $p = 0.578$; women $p = 0.338$.

Table 3A.17. Of working respondents, the percentage in poor quality employment by IMD and gender in 2016–17

	Percentage of workers in poor quality employment in 2016–17		
	All people	Men	Women
Least deprived	28.4	25.7	31.4
Second quintile	35.1	30.8	40.1
Third quintile	32.6	31.3	34.3
Fourth quintile	46.2	50.5	41.2
Most deprived	43.9	43.2	44.8

Note: Test of significant differences by area type: all people $p = 0.001$; men $p = 0.001$; women $p = 0.278$.

Table 3A.18. Of working respondents, the percentage in poor quality employment by urban–rural indicator and gender in 2016–17

	Percentage of workers in poor quality employment in 2016–17		
	All people	Men	Women
Urban	36.8	35.8	38.2
Town and fringe	40.6	37.7	43.4
Village	32.2	31.4	33.1
Hamlet and isolated	22.5	23.7	21.4

Note: Test of significant differences by area type: all people $p = 0.226$; men $p = 0.769$; women $p = 0.310$.

Table 3A.19. Mean social and civic engagement score by GOR and gender in 2016–17

	Mean social and civic engagement score in 2016–17		
	All people	Men	Women
North East	1.1	1.2	1.0
North West	1.3	1.4	1.3
Yorkshire and the Humber	1.2	1.3	1.1
East Midlands	1.2	1.2	1.3
West Midlands	1.2	1.1	1.4
East of England	1.4	1.4	1.4
London	1.7	1.6	1.8
South East	1.5	1.5	1.6
South West	1.5	1.4	1.6

Note: Test of significant differences by area type: all people p = 0.000; men p = 0.004; women p = 0.000.

Table 3A.20. Mean social and civic engagement score by IMD and gender in 2016–17

	Mean social and civic engagement score in 2016–17		
	All people	Men	Women
Least deprived	1.7	1.6	1.8
Second quintile	1.5	1.5	1.5
Third quintile	1.4	1.4	1.4
Fourth quintile	1.2	1.1	1.3
Most deprived	0.9	1.0	0.8

Note: Test of significant differences by area type: all people p = 0.000; men p = 0.000; women p = 0.000.

Table 3A.21. Mean social and civic engagement score by urban–rural indicator and gender in 2016–17

	Mean social and civic engagement score in 2016–17		
	All people	Men	Women
Urban	1.3	1.3	1.3
Town and fringe	1.5	1.5	1.5
Village	1.6	1.5	1.8
Hamlet and isolated	1.8	1.9	1.7

Note: Test of significant differences by area type: all people p = 0.000; men p = 0.013; women p = 0.000.

Table 3A.22. Frequency of volunteering by GOR and gender in 2016–17

	Frequency of volunteering in 2016–17								
	All people			Men			Women		
	Never	< 2	2+	Never	< 2	2+	Never	< 2	2+
North East	83.7	6.6	9.7	83.9	9.0	7.1	83.4	4.7	11.9
North West	72.6	9.2	18.2	71.1	10.1	18.8	74.0	8.4	17.7
Yorkshire and the Humber	83.9	4.3	11.9	83.2	5.5	11.3	84.4	3.3	12.4
East Midlands	75.8	8.9	15.3	76.0	10.3	13.8	75.6	7.6	16.9
West Midlands	77.8	5.6	16.6	82.0	4.8	13.2	74.0	6.3	19.7
East of England	68.0	12.0	20.0	65.1	12.4	22.5	70.3	11.7	18.0
London	67.7	12.3	20.0	66.5	13.2	20.3	69.1	11.3	19.6
South East	70.6	9.6	19.9	71.0	11.1	17.9	70.2	8.3	21.6
South West	70.4	10.0	19.6	73.3	11.2	15.5	67.8	9.0	23.3

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$. < 2 denotes less than two times a month, and 2+ denotes at least two times a month.

Table 3A.23. Frequency of volunteering by IMD and gender in 2016–17

	Frequency of volunteering in 2016–17								
	All people			Men			Women		
	Never	< 2	2+	Never	< 2	2+	Never	< 2	2+
Least deprived	68.9	11.6	19.6	74.0	11.5	14.5	64.2	11.7	24.2
Second quintile	71.1	9.5	19.4	67.7	10.6	21.6	74.1	8.6	17.4
Third quintile	72.0	10.7	17.3	69.0	14.1	16.9	74.6	7.7	17.7
Fourth quintile	75.4	6.3	18.3	77.7	6.6	15.7	73.2	6.1	20.7
Most deprived	84.6	4.9	10.6	83.3	5.0	11.6	85.7	4.7	9.6

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$. < 2 denotes less than two times a month, and 2+ denotes at least two times a month.

Table 3A.24. Frequency of volunteering by urban–rural indicator and gender in 2016–17

	Frequency of volunteering in 2016–17								
	All people			Men			Women		
	Never	< 2	2+	Never	< 2	2+	Never	< 2	2+
Urban	75.6	7.9	16.6	75.7	8.5	15.8	75.4	7.3	17.3
Town and fringe	68.7	10.3	21.0	68.2	14.2	17.6	69.1	7.3	23.6
Village	66.0	15.7	18.3	65.2	16.7	18.2	66.8	14.7	18.4
Hamlet and isolated	64.9	9.7	25.4	65.6	10.1	24.3	64.4	9.4	26.2

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$. < 2 denotes less than two times a month, and 2+ denotes at least two times a month.

Table 3A.25. Number of cultural activities engaged in by GOR and gender in 2016–17

	Number of cultural activities engaged in during 2016–17								
	All people			Men			Women		
	None	1	2+	None	1	2+	None	1	2+
North East	40.7	48.9	10.4	45.6	44.3	10.1	36.2	53.2	10.6
North West	35.8	53.3	10.9	33.7	54.7	11.7	37.8	52.0	10.2
Yorkshire and the Humber	37.9	51.4	10.8	37.4	49.5	13.1	38.3	53.0	8.6
East Midlands	40.7	49.7	9.7	48.2	46.2	5.7	33.4	53.1	13.6
West Midlands	36.3	51.5	12.2	37.1	54.8	8.2	35.5	48.4	16.1
East of England	35.3	51.5	13.1	36.0	51.7	12.4	34.8	51.4	13.8
London	39.5	41.9	18.7	38.3	43.6	18.1	40.9	39.9	19.3
South East	30.8	54.3	14.9	30.3	55.3	14.4	31.3	53.5	15.3
South West	32.9	55.6	11.5	32.3	55.5	12.3	33.5	55.7	10.8

Note: Test of significant differences by area type: all people *p* = 0.000; men *p* = 0.000; women *p* = 0.000.

Table 3A.26. Number of cultural activities engaged in by IMD and gender in 2016–17

	Number of cultural activities engaged in during 2016–17								
	All people			Men			Women		
	None	1	2+	None	1	2+	None	1	2+
Least deprived	25.4	58.1	16.5	24.4	59.5	16.1	26.4	56.8	16.9
Second quintile	32.4	53.3	14.3	34.5	50.9	14.6	30.5	55.5	14.1
Third quintile	37.2	49.2	13.6	36.0	51.4	12.6	38.3	47.2	14.5
Fourth quintile	39.7	51.3	9.1	41.3	50.7	8.0	38.0	51.9	10.1
Most deprived	55.7	37.9	6.4	56.3	37.9	5.8	55.2	37.8	7.1

Note: Test of significant differences by area type: all people *p* = 0.000; men *p* = 0.000; women *p* = 0.000.

Table 3A.27. Number of cultural activities engaged in by urban–rural indicator and gender in 2016–17

	Number of cultural activities engaged in during 2016–17								
	All people			Men			Women		
	None	1	2+	None	1	2+	None	1	2+
Urban	36.9	50.2	12.9	37.5	50.0	12.6	36.3	50.4	13.3
Town and fringe	35.5	55.0	9.5	34.3	55.6	10.1	36.5	54.5	9.0
Village	33.9	50.9	15.2	36.1	52.2	11.7	31.8	49.5	18.7
Hamlet and isolated	23.9	61.5	14.6	23.7	62.0	14.4	24.1	61.0	14.9

Note: Test of significant differences by area type: all people *p* = 0.055; men *p* = 0.605; women *p* = 0.118.

Table 3A.28. Number of close contacts the respondent meets up with regularly by GOR and gender in 2016–17

	Number of close contacts in 2016–17											
	All people				Men				Women			
	0	1	2	3	0	1	2	3	0	1	2	3
North East	12.0	37.2	30.2	20.6	13.1	44.7	23.2	19.1	11.1	30.9	36.2	21.9
North West	14.8	35.4	30.7	19.2	17.0	42.9	24.2	15.9	12.9	29.2	36.0	21.9
Yorkshire and the Humber	17.8	31.7	33.5	17.1	17.9	38.5	28.9	14.7	17.8	26.7	36.8	18.8
East Midlands	23.4	31.5	29.4	15.7	30.4	29.2	26.6	13.8	17.1	33.6	31.9	17.4
West Midlands	17.3	34.7	30.8	17.2	16.2	40.7	26.1	17.1	18.2	29.8	34.6	17.4
East of England	27.6	34.1	26.6	11.7	32.1	32.6	28.0	7.3	24.1	35.3	25.6	15.0
London	18.3	40.0	27.2	14.5	19.2	41.8	26.4	12.6	17.3	38.2	28.0	16.5
South East	23.4	35.8	29.4	11.5	30.7	33.2	23.2	12.9	17.3	37.9	34.5	10.3
South West	24.0	34.1	25.1	16.8	29.8	32.5	21.6	16.1	18.8	35.5	28.3	17.5

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.002$.

Table 3A.29. Number of close contacts the respondent meets up with regularly by IMD and gender in 2016–17

	Number of close contacts in 2016–17											
	All people				Men				Women			
	0	1	2	3	0	1	2	3	0	1	2	3
Least deprived	24.5	36.8	26.6	12.0	31.3	36.3	21.6	10.9	19.0	37.3	30.7	13.0
Second quintile	21.0	36.0	29.5	13.6	24.6	36.8	27.3	11.3	18.0	35.3	31.3	15.5
Third quintile	22.2	35.3	28.0	14.5	24.7	38.8	23.5	13.0	20.0	32.5	31.8	15.8
Fourth quintile	16.9	31.4	31.6	20.1	17.2	34.7	29.0	19.1	16.6	28.6	33.9	20.9
Most deprived	13.8	32.5	31.6	22.2	17.7	36.3	25.5	20.5	10.4	29.1	36.8	23.6

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.30. Number of close contacts the respondent meets up with regularly by urban–rural indicator and gender in 2016–17

	Number of close contacts in 2016–17											
	All people				Men				Women			
	0	1	2	3	0	1	2	3	0	1	2	3
Urban	19.0	34.8	29.4	16.9	21.8	36.3	26.2	15.7	16.6	33.5	32.0	17.9
Town and fringe	24.6	32.5	30.6	12.4	31.5	35.6	21.1	11.8	19.4	30.1	37.8	12.8
Village	23.1	36.8	28.8	11.4	31.5	36.1	24.8	7.6	15.3	37.3	32.5	14.9
Hamlet and isolated	30.8	38.5	20.0	10.7	24.9	47.1	20.8	7.3	36.0	30.9	19.4	13.7

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.014$; women $p = 0.000$.

Table 3A.31. Percentage of people without access to a car or van when needed by GOR and gender in 2016–17

	Percentage with no access to a car or van in 2016–17		
	All people	Men	Women
North East	19.9	17.0	22.4
North West	14.2	12.1	16.1
Yorkshire and the Humber	20.7	14.2	26.1
East Midlands	13.7	7.2	20.0
West Midlands	12.7	11.1	14.3
East of England	9.4	7.4	11.0
London	21.8	15.6	28.6
South East	11.3	8.5	13.8
South West	11.2	6.4	15.7

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.32. Percentage of people without access to a car or van when needed by IMD and gender in 2016–17

	Percentage with no access to a car or van in 2016–17		
	All people	Men	Women
Least deprived	6.4	4.6	8.0
Second quintile	10.5	5.8	14.7
Third quintile	10.8	8.6	12.7
Fourth quintile	18.2	13.3	22.8
Most deprived	34.8	28.2	40.9

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.33. Percentage of people without access to a car or van when needed by urban–rural indicator and gender in 2016–17

	Percentage with no access to a car or van in 2016–17		
	All people	Men	Women
Urban	16.9	12.6	20.9
Town and fringe	9.5	6.3	12.0
Village	5.4	3.8	6.9
Hamlet and isolated	3.9	1.8	5.8

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.34. Frequency of public transport use (in %) by GOR and gender in 2016–17

	Frequency of public transport use in 2016–17								
	All people			Men			Women		
	Once a week or more	Less than weekly	Never	Once a week or more	Less than weekly	Never	Once a week or more	Less than weekly	Never
North East	31.2	36.4	32.4	25.3	40.2	34.5	36.2	33.2	30.6
North West	23.0	45.2	31.8	19.9	48.9	31.2	25.7	41.9	32.3
Yorkshire and the Humber	31.5	37.9	30.6	24.6	41.9	33.6	37.3	34.5	28.2
East Midlands	18.6	38.1	43.4	15.6	38.2	46.2	21.5	37.9	40.6
West Midlands	17.8	39.1	43.1	13.7	39.6	46.8	21.7	38.7	39.6
East of England	20.6	49.9	29.5	17.6	49.7	32.6	23.1	50.0	26.9
London	62.2	26.2	11.6	65.7	25.4	8.9	58.3	27.1	14.6
South East	22.5	45.3	32.3	20.9	47.1	32.0	23.8	43.7	32.5
South West	16.2	41.7	42.1	13.8	40.7	45.5	18.5	42.5	39.0

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.35. Frequency of public transport use (in %) by IMD and gender in 2016–17

	Frequency of public transport use in 2016–17								
	All people			Men			Women		
	Once a week or more	Less than weekly	Never	Once a week or more	Less than weekly	Never	Once a week or more	Less than weekly	Never
Least deprived	22.8	50.1	27.1	22.7	49.8	27.5	22.9	50.3	26.8
Second quintile	25.2	44.4	30.4	23.5	46.2	30.3	26.8	42.8	30.5
Third quintile	20.4	39.8	39.9	18.5	40.4	41.1	22.0	39.2	38.8
Fourth quintile	33.2	33.5	33.4	31.0	34.3	34.7	35.1	32.7	32.2
Most deprived	36.6	29.7	33.8	29.6	32.0	38.4	42.8	27.6	29.6

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.36. Frequency of public transport use (in %) by urban–rural indicator and gender in 2016–17

	Frequency of public transport use in 2016–17								
	All people			Men			Women		
	Once a week or more	Less than weekly	Never	Once a week or more	Less than weekly	Never	Once a week or more	Less than weekly	Never
Urban	31.3	39.3	29.5	28.9	40.5	30.6	33.5	38.1	28.4
Town and fringe	18.8	43.2	38.0	15.5	45.1	39.4	21.4	41.6	36.9
Village	8.9	46.8	44.3	8.1	46.5	45.4	9.6	47.1	43.3
Hamlet and isolated	8.0	44.5	47.5	8.4	41.1	50.5	7.7	47.4	44.9

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.37. Reasons reported for not using public transport (in %) by GOR and gender in 2016–17

	Reason for not using public transport														
	All people					Men					Women				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
North East	29.9	10.4	4.8	15.2	68.8	30.2	10.5	3.0	13.8	68.1	29.7	10.3	6.4	16.6	69.4
North West	36.3	14.0	7.1	17.3	74.0	41.2	16.1	7.3	13.0	77.9	31.6	11.9	6.9	21.4	70.2
Yorkshire and the Humber	27.9	8.6	4.3	16.6	67.3	32.6	7.3	5.4	12.0	70.6	23.2	9.9	3.2	21.2	64.0
East Midlands	47.7	12.0	7.5	11.8	74.4	51.1	12.9	9.0	6.4	78.2	44.1	11.1	5.8	17.6	70.5
West Midlands	44.1	13.1	6.4	12.6	67.1	46.7	12.2	6.6	9.8	62.8	41.5	13.9	6.2	15.4	71.3
East of England	46.7	17.8	8.3	11.6	73.1	50.5	17.3	7.2	10.2	70.3	43.3	18.2	9.3	12.8	75.6
London	28.4	2.7	4.5	25.6	59.7	32.6	3.4	5.2	19.3	60.2	24.7	2.0	3.9	31.1	59.2
South East	51.4	14.4	7.0	11.4	64.0	55.0	14.8	5.3	7.9	68.2	48.1	14.0	8.6	14.7	60.1
South West	50.4	17.6	8.0	12.0	64.5	51.9	16.3	6.3	10.0	66.9	49.0	18.9	9.7	13.9	62.1

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$. The five types of explanation (as defined in Section 3.3.2) are: (1) not available; (2) unreliable; (3) too expensive; (4) health; (5) no need.

Table 3A.38. Reasons reported for not using public transport (in %) by IMD and gender in 2016–17

	Reason for not using public transport														
	All people					Men					Women				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Least deprived	46.8	13.7	5.4	9.0	72.2	52.5	13.2	4.6	6.2	72.2	41.5	14.2	6.1	11.7	72.2
Second quintile	47.7	17.9	8.5	12.8	66.2	50.0	18.3	7.6	10.0	68.2	45.6	17.5	9.4	15.5	64.3
Third quintile	46.7	13.1	8.1	11.4	67.0	49.6	13.7	8.7	8.7	68.1	44.1	12.6	7.6	13.8	65.9
Fourth quintile	35.0	10.8	4.8	17.5	70.4	39.8	11.7	4.2	12.9	71.1	30.2	9.9	5.4	22.2	69.8
Most deprived	27.9	7.4	6.3	26.4	64.5	29.7	6.4	6.3	19.7	69.8	25.9	8.6	6.3	33.8	58.7

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$. The five types of explanation (as defined in Section 3.3.2) are: (1) not available; (2) unreliable; (3) too expensive; (4) health; (5) no need.

Table 3A.39. Reasons reported for not using public transport (in %) by urban–rural indicator and gender in 2016–17

	Reason for not using public transport														
	All people					Men					Women				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Urban	36.2	9.8	6.7	16.0	70.4	39.8	9.7	6.6	11.9	72.6	32.7	9.8	6.7	20.2	68.2
Town and fringe	47.7	19.9	8.0	11.9	68.0	53.1	20.6	6.3	9.5	66.7	43.1	19.3	9.4	14.1	69.1
Village	63.3	26.3	6.7	6.6	61.5	65.0	27.2	6.6	4.5	62.7	61.7	25.4	6.8	8.6	60.3
Hamlet and isolated	70.6	15.2	6.6	9.5	56.8	71.7	15.5	3.7	10.6	54.5	69.7	14.8	9.1	8.5	58.7

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$. The five types of explanation (as defined in Section 3.3.2) are: (1) not available; (2) unreliable; (3) too expensive; (4) health; (5) no need.

Table 3A.40. Mean CES-D score by GOR and gender in 2016–17

	Mean CES-D score in 2016–17		
	All people	Men	Women
North East	1.6	1.5	1.6
North West	1.5	1.2	1.8
Yorkshire and the Humber	1.6	1.1	2.1
East Midlands	1.4	1.0	1.8
West Midlands	1.6	1.3	1.8
East of England	1.2	1.1	1.3
London	1.4	1.4	1.4
South East	1.4	1.1	1.6
South West	1.2	1.0	1.4

Note: Test of significant differences by area type: all people $p = 0.043$; men $p = 0.657$; women $p = 0.005$.

Table 3A.41. Mean CES-D score by IMD and gender in 2016–17

	Mean CES-D score in 2016–17		
	All people	Men	Women
Least deprived	1.1	0.8	1.4
Second quintile	1.2	0.9	1.5
Third quintile	1.3	1.1	1.5
Fourth quintile	1.7	1.5	1.9
Most deprived	2.0	1.8	2.2

Note: Test of significant differences by area type: all people $p = 0.000$; men $p = 0.000$; women $p = 0.000$.

Table 3A.42. Mean CES-D score by urban–rural indicator and gender in 2016–17

	Mean CES-D score in 2016–17		
	All people	Men	Women
Urban	1.5	1.2	1.7
Town and fringe	1.3	0.9	1.6
Village	1.2	1.0	1.4
Hamlet and isolated	1.0	0.9	1.0

Note: Test of significant differences by area type: all people $p = 0.002$; men $p = 0.130$; women $p = 0.174$.

4. The determinants and consequences of falling at older ages in England

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Key points arising from this chapter are:

- The prevalence of a severe fall in ELSA members was 5% for men and 10% for women at wave 4, and 7% for men and 11% for women at wave 8. The proportion of the study sample experiencing a severe fall increased with age.
- The prevalence of those who received a follow-up from a health professional for falls (severe and non-severe) increased with age at both wave 4 and wave 8. Overall, however, 25% of men and 23% of women experiencing a fall in wave 4 received professional healthcare follow-up, compared with only 18% of men and 20% of women in wave 8.
- Risk factors for experiencing a severe fall during follow-up were chronic health conditions (heart disease, stroke and arthritis), not living with a partner, having depressive symptoms, reporting loneliness, having difficulties with activities of daily living and instrumental activities of daily living, and problems with bladder incontinence.
- Objectively measured faster walking speed was a protective factor for experiencing a severe fall during follow-up.
- Severe falls had clear deleterious consequences for physical and cognitive function. These included reduced levels of mobility, walking speed, physical activity, activities of daily living and, perhaps more surprisingly, memory.
- ELSA members reporting a severe fall had lower well-being indicators (e.g. higher depressive symptoms and lower quality of life) than those who did not experience a fall.
- ELSA members who experienced a severe fall were also consistently lonelier than those who did not experience a fall.
- ELSA participants who were in employment and had a severe fall were more likely to exit the labour market subsequently, relative to those in paid employment who reported no such fall.

4.1 Introduction

Falls, operationally defined as an unanticipated incident in which a person comes to rest on the ground or a lower level (Lamb et al., 2005), are common – with one in three people over 65 years of age experiencing at least one fall each year in the UK. These events are the most frequent type of accident among older people (Gale, Cooper and Aihie Sayer, 2016) and injuries occur in approximately 20% of such cases (Lord, Sherrington and Menz, 2001). Older people who have suffered a fall experience an increased risk of recurrence – having a fall is a risk factor for another – and of being hospitalised (World Health Organization, 2008). In addition to the injuries following a fall – typically hip fracture and intracranial trauma (Briggs, Kennelly and Kenny, 2018) – falls are linked to elevated rates of admission to nursing home care (Tinetti and Williams, 1997) and other complications ensue, including an increased likelihood of future disability (Gill et al., 2013), loss of independence and premature mortality (Spaniolas et al., 2010). More subtle implications of a fall, including also non-injurious events, include a negative impact on functionality, self-confidence (Tinetti and Williams, 1998), social and physical activities, quality of life and life satisfaction (Stenhagen et al., 2014). For these reasons, falls incur considerable medical care costs, with the economic impact on the NHS estimated to be £1.7 billion per year.[19] With falls being a leading cause of morbidity and mortality in older adults, the prevention of falls is an urgent public health challenge.

Using cross-sectional and longitudinal data spanning over eight years in ELSA, we are well positioned to explore both the determinants and consequences of falling at older ages. In Section 4.2, first we present the prevalence of falls at wave 4 (2008–09) and wave 8 (2016–17) followed by an assessment of the involvement of health professionals following initial treatment. Then, we examine the social, physical, cognitive and psychological determinants of falls. In Section 4.3, we report on the wide-ranging consequences. Finally, in Section 4.4, we draw our conclusions.

4.2 Determinants of falling

The frequency of falls and the potential for experiencing a fall that results in a hospital stay have been shown, unsurprisingly, to increase with age (Ambrose, Paul and Hausdorff, 2013; Gale et al., 2016). Older women appear more likely to fall than older men, perhaps because of the reduced bone mineral density ascribed to the menopause (Gale et al., 2016). Appropriate interventions to prevent falls may reduce the rate of falls by 24% (Gillespie et al., 2012). Understanding the risk factors that determine whether someone is at risk of experiencing a fall, especially a serious fall for which they might require treatment in hospital, is therefore an important priority for health and social care services. Several factors that predict the likelihood of having a serious fall in later life have been identified, and these range from social factors to

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[19] See 'Falls in the over 65s cost NHS £4.6 million a day', published by AgeUK in 2010, available at http://www.ageuk.org.uk/latest-press/archive/falls-over-65s-cost-nhs/.

cardiovascular diseases (Jansen et al., 2016), impaired balance and gait, cognitive decline (Ambrose et al., 2013), amongst others (Gillespie et al., 2012; Nyman and Victor, 2012). A report by the World Health Organization (2008) suggested that these factors could be categorised into four board dimensions: biological, behavioural, environmental and socio-economic factors.

4.2.1 Methods

At each wave of data collection, participants in ELSA who were aged 60 or above were asked if they had 'fallen down in the last year for any reason'. A follow-up enquiry for those responding positively was used to ascertain if they had 'injured themselves seriously enough to need medical treatment'. We focus here on determinants of severe falls; that is, accidents that meant the person had sought medical treatment. The baseline sample of this study is wave 4, as it included a refreshment sample, thus providing a larger sample size for our analysis. To study the determinants of falls, we selected a sample of 3,342 participants who had not experienced a severe fall at wave 4 and who had then participated at each subsequent wave from wave 5 to wave 8. Participants who reported a severe fall at wave 5 (i.e. a 'new' fall), wave 6, wave 7 or wave 8 constitute the 'severe fall' group (total N = 794 across the four waves). We examined a range of predictors, chosen to represent determinants from a range of themes.

Further investigations following a fall

Study members who reported falling down were also asked the following questions about the follow-up care they received from a health professional.

- 'Did a doctor or nurse or physiotherapist test your balance or strength or watch how you walk to understand why you fell?'
- 'Did a doctor or nurse or physiotherapist recommend any additional tests, such as heart tests or brain scans to understand why you fell?'

From these two questions, we computed a variable with the following categories: 'no health professional ascertained cause', 'balance and/or strength test administered', 'additional tests administered (e.g. heart tests or brain scans)' and 'balance and/or strength and additional tests'.

Socio-economic and social risk factors

Living with a partner is defined as whether the participant was currently cohabiting with a partner, regardless of marital status. *Household wealth* throughout the analyses includes savings, investments and value of property or business assets, but excludes pension assets. *Loneliness* is assessed by three items of the UCLA loneliness scale (lack companionship, feeling left out, feeling isolated), with a response for each item from 'hardly ever or never', 'some of the time' or 'often' (Hughes et al., 2004). The total score ranges from 3 to 9, with higher scores indicating greater loneliness. *Social isolation* was captured using a series of enquiries that included marital status/cohabiting (as above), monthly contact (including face-to-face, telephone or written/e-mail contact) with children, other immediate family and friends, and participation in any organisations, religious groups or committees (Shankar et al., 2011). From these aspects, a score was computed (range 0–5), with higher scores indicating greater social isolation.

Health behaviour risk factors

Body mass index (BMI) is derived from weight and height measured during a home visit by a nurse (kg/m^2) and the three categories created: underweight/normal (<18–24.9), overweight (25.0–29.9) and obese (30+). It was not possible to explore separately the underweight category of BMI due to the small sample size.

Smoking status was defined as current, former or never smoked.

Frequency of alcohol intake in the last 12 months was ascertained in the self-completion questionnaire, and responses were recoded into a binary variable defined as having an alcoholic drink daily (5/7 days week) or less than daily (<5 days a week).

Physical activity was measured using responses to questions on leisure-time physical activity and aggregated to compute a five-level score from inactive to active. In this analysis, we used a binary variable to indicate sedentary behaviour.

Health status (physical/mental functioning) risk factors

Health conditions. Respondents are asked whether a physician had ever told them that they suffered from any of the following conditions: coronary heart disease (angina or myocardial infarction), diabetes, arthritis and stroke.

Walking speed. A walking speed test was performed among participants aged 60 and over (Zaninotto, Sacker and Head, 2013). The test involved measuring the duration of time taken to walk a distance of 8 feet. The walking speed of respondents (in metres per second, m/s) is then computed.

Balance. All participants for whom it was judged safe to do so are asked to try to stand with their feet together, side by side for 10 seconds with a nurse recording whether or not the position could be held.

Activities of daily living and instrumental activities of daily living. Respondents are asked to report whether they have any difficulty with the following activities of daily living (ADLs): dressing, walking across a room, bathing or showering, eating, getting out of bed, using the toilet. Similarly, they report difficulties with instrumental ADLs (IADLs): using a map, preparing a hot meal, shopping for groceries, making phone calls, taking medications, doing work around the house, managing money. The number of difficulties with ADLs and IADLs were used as binary predictors (one or more or no difficulties).

Depressive symptoms. Depressive symptoms are assessed using the eight-item version of the Centre for Epidemiologic Study Depression scale (CESD-8) administered in the face-to-face interview (Radloff, 1977). Enquiries were made about the degree to which the respondent had experienced depressive symptoms, such as restless sleep and being unhappy, over the prior month. We used a binary variable to define a high level of depressive symptoms as those reporting 4 or more (White et al., 2016).

Incontinence. Participants were asked whether in the last 12 months they had lost any amount of urine beyond their control.

Hearing/eyesight. Participants rate their hearing acuity (with a hearing aid if used) using five categories (excellent, very good, good, fair or poor). Responses were dichotomised (excellent/good versus fair/poor). Participants are asked to rate their eyesight (with glasses if used) using six categories (excellent, very good, good, fair, poor or registered or legally blind). We grouped these responses into two categories (excellent/very good/good versus fair/poor or blind).

Cognition. This is an index that combines the scores on the objective memory tests (word-list learning, immediate and delayed memory), ranging from 0 to 20. Higher scores indicate better memory (Batty, Deary and Zaninotto, 2016).

Statistical analysis

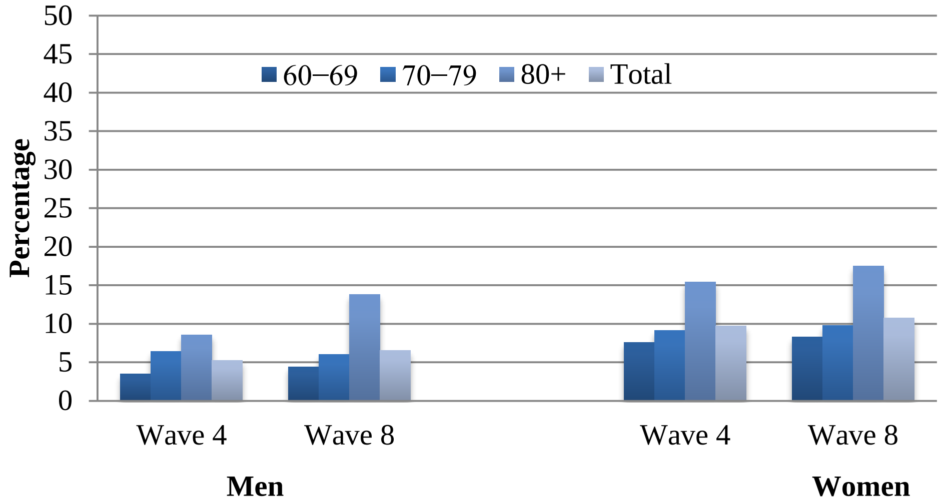
Weighted prevalences of people experiencing falls in the two years prior to the ELSA interview and health professional follow-up received for falls are presented by age groups and gender. Logistic regression models are used to summarise the association between each potential determinant at wave 4 and future severe falls (between waves 5 and 8). All estimates of the effects were adjusted for age, gender, wealth and whether the participant was living with a partner. Because women are more likely to experience a fall than men, we present the results stratified by gender, and the interactions between each predictor were also computed.

4.2.2 Prevalence of falls and health professional follow-up

We examined the prevalence of falls at wave 4 and wave 8 according to age and gender. This is presented in Tables 4A.1 and 4A.2 and in Figure 4.1. The overall prevalence of people who had not experienced a fall did not change over time; it was 76% among men at wave 4 and wave 8 and 70% among women at wave 4 and wave 8 (73% for both men and women combined at each wave). The prevalence of men who had experienced a fall that was non-severe was 18% at both waves 4 and 8, and the prevalence of women who had experienced a fall that was non-severe was 20% at wave 4 and 19.4% at wave 8. In both men and women and at each wave, the prevalence of those experiencing a severe fall in the two years prior to the ELSA interview increased significantly with age. Among men aged 80+, the prevalence of serious falls was significantly higher at wave 8 compared with wave 4 (14% and 9%, respectively; $p < 0.05$). In those aged <80, the proportions of people reporting serious falls were similar at each time point. Among women in each age group, the prevalence of serious falls was slightly higher at wave 8 compared with wave 4, but it did not reach statistical significance. Overall, it can be seen that the prevalence of severe falls at wave 4 and wave 8 was greater in women (10% at wave 4 and 11% at wave 8) than men (5% at wave 4 and 7% at wave 8).

Table 4A.3 presents the weighted prevalence of health professional follow-up, the purpose of which was to understand the reason for the fall (severe and non-severe) among men by age groups. The prevalence of those who did not receive any follow-up by a health professional decreased with age at each wave. Overall, 75% of men who experienced a fall in wave 4 did not receive health professional follow-up compared with 82% in wave 8 ($p < 0.01$). Among those who received health professional follow-up at wave 4, 12% had a balance and/or strength test, 6% had additional tests and 7% had both, whereas the corresponding figures at wave 8 were 9%, 3% and 6%. Therefore, the main difference between the two waves was in the lower prevalence of all men receiving additional tests at wave 8 compared with wave 4 ($p < 0.01$). There was not a clear age pattern in the prevalence of those receiving health professional follow-up among men.

Figure 4.1. Proportion of participants reporting a severe fall at wave 4 and wave 8, by age and gender



The results for women are presented in Table 4A.4. The prevalence of women who did not receive any health professional follow-up decreased with age at wave 8 (84% in those aged 60–69, 80% in those aged 70–79 and 74% in those aged 80+) but no clear age trend was observed in wave 4 (76% in those aged 60–69, 77% in those aged 70–79 and 78% in those aged 80+). Furthermore, there were no clear differences between wave 4 and wave 8 in the health professional follow-up received.

4.2.3 Socio-economic and other social risk factors

In this section, we examine the association of socio-economic and other social risk factors with experiencing a severe fall between waves 5 and 8. In Table 4A.5, we report the odds ratios (ORs) and 95% confidence intervals (CIs) for the relationship between these predictors at wave 4 and the risk of future severe falls (between waves 5 and 8). As noted earlier, falls were positively associated with increasing age and being female ($p < 0.001$). Not living with a partner was also linked to a greater likelihood of reporting a severe fall ($p < 0.05$), whereas marital status was not. There was no association between wealth and risk of severe falls. A higher score on the loneliness index was also associated with experiencing a severe fall during the follow-up ($p < 0.001$), but this was not the case for higher scores on the social isolation index. Interactions between each of the predictors and gender were examined and found to be non-significant, meaning that these findings were consistent between men and women.

4.2.4 Health behaviour risk factors

In Table 4A.6, we see that, of the health behaviour risk factors examined, only physical activity was associated with the risk of severe falls at subsequent waves. Thus, those study members who reported being physically inactive at wave 4 were more likely to have reported a severe fall across the follow-up than their more physically active counterparts. The association was observed after taking into account age, gender, wealth and living with a partner. The magnitude of the association between physical activity and subsequent severe falls was somewhat greater in women compared with men, but similar associations were observed in both genders.

4.2.4 Health status (physical/mental functioning) risk factors

In Table 4A.7, we report the link between indicators of physical and mental functioning and future severe falls. It is evident that people with a diagnosis of coronary heart disease (CHD), stroke or arthritis at wave 4 were more likely to experience a severe fall (first or recurrent) in subsequent waves. We also see that, perhaps in support of the result for physical activity, men and women in ELSA with a faster walking speed were less likely to experience a severe fall at future waves (OR, 0.73; 95% CI 0.55, 0.95; $p < 0.01$). It was also the case that those study members who reported incontinence ($p < 0.05$) and having any limitation with ADLs ($p < 0.001$) or IADLs ($p < 0.01$) at wave 4 experienced an increased fall risk. Additionally, a high level of depressive symptoms appears to offer some predictive capacity for falls ($p < 0.01$). All of these associations were seen after adjustment for age, gender, quintile of wealth and living with a partner.

4.2.5 Conclusions

In this section, we have examined the determinants of experiencing a severe fall. In sum, we found that age, not living with a partner, loneliness and a higher level of depressive symptoms were all associated with a higher likelihood of experiencing a future severe fall. Furthermore, a lack of physical activity, certain chronic health conditions (CHD, stroke and arthritis), and reporting incontinence, difficulties with ADLs and IADLs were also related to a higher risk of experiencing a severe fall. Although women were more likely to report that they had experienced a severe fall, we found similar patterns of association with these risk factors in men and women.

4.3 Consequences of falling

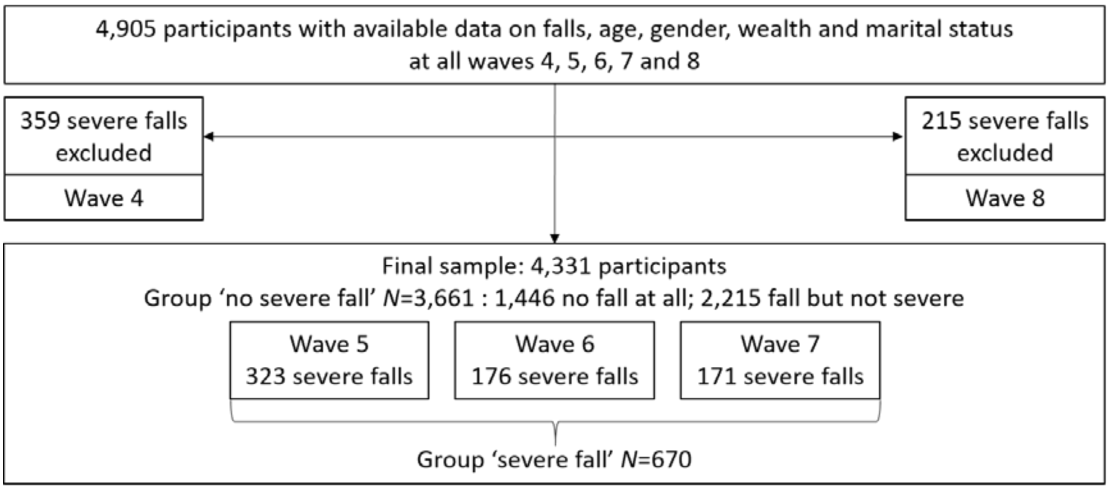
In this section, we aim to explore the psychological, physical, cognitive and social consequences of falling, as well as the potential for a fall predicting an exit from the labour market.

4.3.1 Methods

To study the consequences of falls, we use data from wave 4 to wave 8. As in the prior section, all participants who reported a severe fall at wave 4 are excluded, so the sample is free of severe falls at the beginning of the study period. Participants who report a new severe fall at waves 5, 6 or 7 constitute the ‘severe fall’ group. The other group, ‘no severe fall’, did not report a severe fall from waves 5 to 8. As the aim of this analysis is to study the consequences of falling, we need to have data for at least one wave of data collection following the newly reported fall; therefore, participants who report a new severe fall at wave 8 (last time point) are excluded from the analysis. The falls happen at waves 5, 6 or 7. Therefore, we do not strictly show the individual changes before and after a severe fall, but rather the overall long-term trajectories of the group who experienced a severe fall compared with the group who did not.

The psychological, physical, cognitive and social trajectories over time are presented for the group of people who experienced a severe fall during the follow-up. A total of 4,331 participants have available data on falls at every wave from waves 4 to 8. The flow diagram of participants included in the analysis is presented in Figure 4.2.

Figure 4.2. Flow diagram of participants included in the analysis



Measures of psychological well-being

The CASP-19 index from the self-completion questionnaire was used to assess quality of life (Hyde et al., 2003); CASP stands for control, autonomy, self-realisation and pleasures. The questionnaire contains 19 items covering the four conceptual domains of individual needs that are particularly relevant in later life, and responses are added to compute a continuous score ranging from 0 to 57 (a higher score reflects a better quality of life). As described in the prior section, depressive symptoms were assessed using the eight-item version of the CESD-8, defined as in Section 4.2.1. Life satisfaction is simply measured as the answer to the question 'Are you satisfied with your life?', with answers arrayed across a seven-point Likert scale (strongly disagree to strongly agree).

Measures of physical and cognitive function

The protocol for walking speed is expressed in metres per second (m/s), and ADLs and IADLs are described in Section 4.2.1. To assess mobility, respondents were asked to report any difficulty with the following mobility-related activities: walking 100 yards, sitting for two hours, getting up from a chair after sitting for long periods, climbing one flight of stairs, climbing several flights stairs, stooping, kneeling or crouching, reaching or extending arms above shoulder level, pulling or pushing large objects, lifting or carrying weights over 10 pounds, and picking up a five-pence coin from a table. The numbers of difficulties with ADLs, IADLs and mobility are used as continuous outcomes. Responses to questions on leisure-time physical activity were aggregated to compute a five-level score from inactive to active. For cognitive function, we use the memory score (defined in Section 4.2.1) that is consistently repeated across all waves (Batty et al., 2016).

Measures of social capital

Loneliness and social isolation were assessed as described in Section 4.2.1.

Statistical analysis

Linear mixed models are used for all continuous outcomes. Mixed-effect logistic regressions are used for binary responses. This allows us to model the change in the outcome over five time points (wave 4 to wave 8) and to ascertain whether this change is different in the group that experienced a severe fall during follow-up relative to the group who did not. The explanatory variables are the group (severe fall, no severe fall), time and an interaction of group by time, as well as demographic covariates: age (baseline, continuous), gender of the participant, wealth (time-varying, quintiles) and living with a partner (time-varying, binary). We display the change in outcomes over time separately for people who experienced a fall (N = 670 (15.5%) in either wave 5, 6 or 7) and those who did not, and the p-value for the effect of group, time and group by time interaction. If significant, the latter indicates whether the change over time, if any, is different in the two groups.

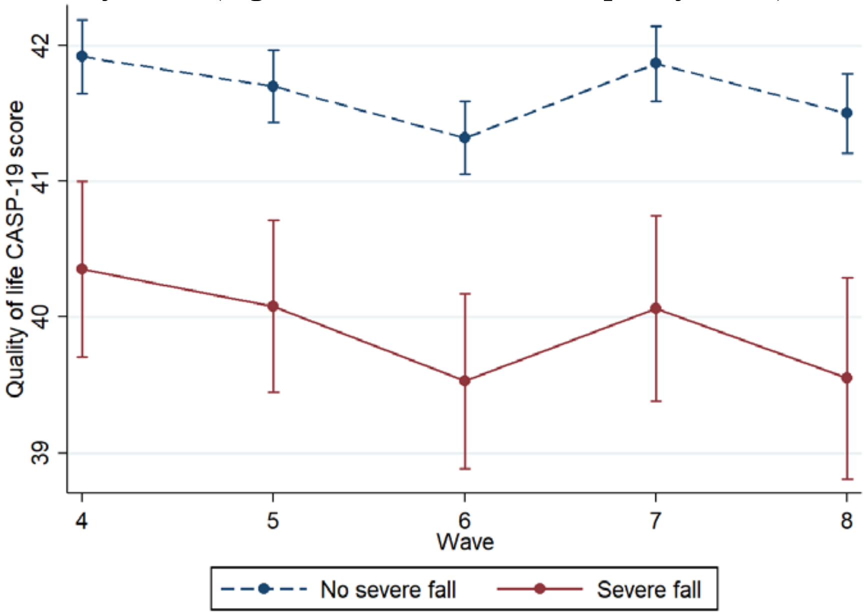
All estimates presented in this chapter are adjusted for age, gender, wealth and living with a partner.

4.3.2 Well-being

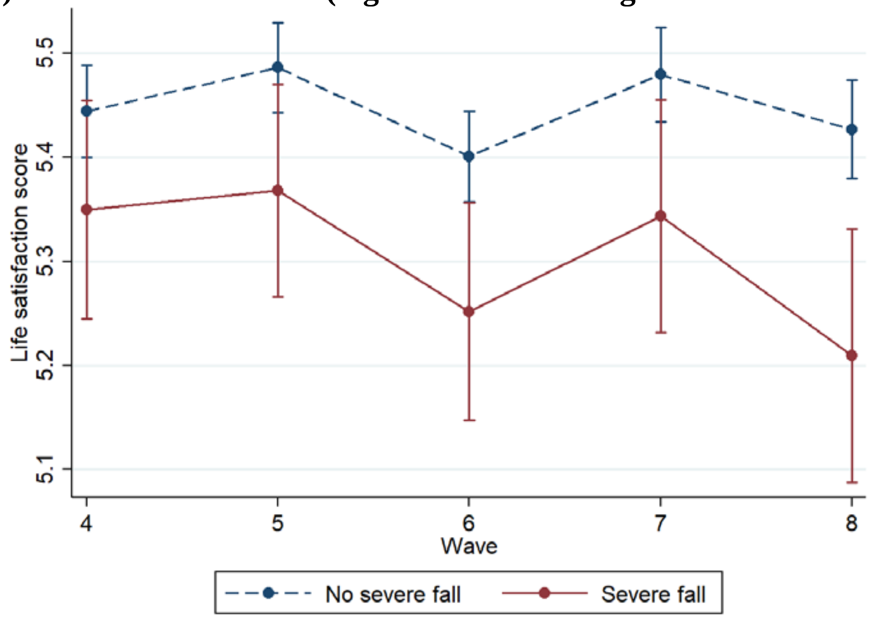
As is apparent from Figure 4.3 and Table 4A.8, quality of life, life satisfaction and depressive symptoms display variations with time, with a trend towards less favourable levels (all p-values for change over time < 0.001). Overall, people experiencing a severe fall have worse well-being scores; this was even evident at wave 4 prior to actually experiencing a fall. This may reflect that people who are more vulnerable to falling have a worse quality of life and more depressive symptoms. However, the trajectories of well-being outcomes post-fall do not appear to differ from the trajectories in the comparison group (p-value > 0.05). This means that experiencing a severe fall does not appear to affect well-being.

Figure 4.3. Trajectories from wave 4 to wave 8 of well-being, according to severe fall status at waves 5, 6 or 7

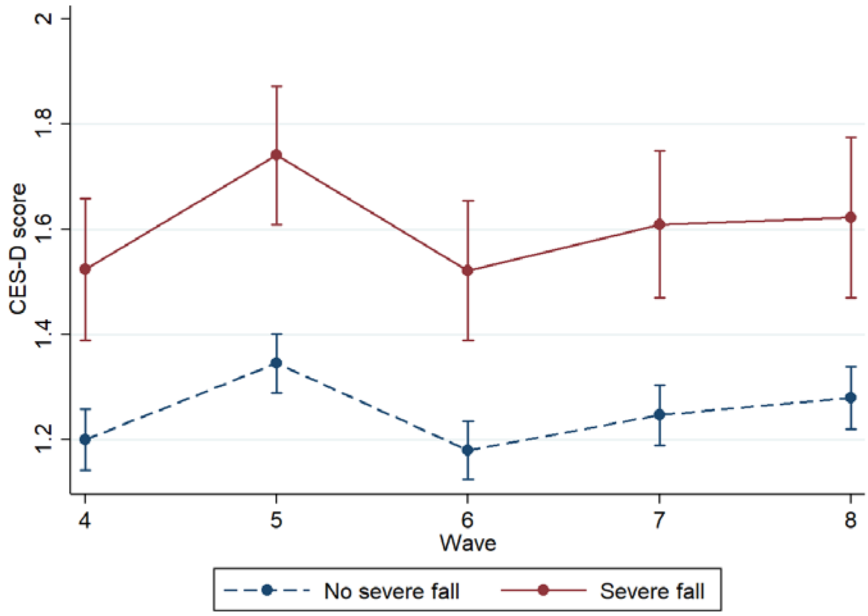
a) Quality of life (higher scores reflect better quality of life)



b) Life satisfaction score (higher scores reflect greater life satisfaction)



c) Depressive symptoms (higher scores reflect worse depressive symptoms)



4.3.3 Physical and cognitive functioning

Walking speed was markedly lower across the whole time range for people who experienced a severe fall relative to those who did not (see Figure 4.4 and Table 4A.8). In particular, lower walking speed at baseline suggests that participants who had experienced a severe fall already had more walking difficulties before they fell. Trajectories of walking speed show a relative stability from wave 4 to wave 6 followed by a decrease, which appears sharper from wave 7 to 8 in the 'fall' group. This indicates that, not only do the participants who fall have a slower walking speed at baseline, but they also decline more rapidly.

The levels of physical activity also declined over time in all participants as they grow older (see Figure 4.5 and Table 4A.8), but the initial levels are lower and the decrease is more noticeable for people who experience a severe fall.

The change over time in the number of difficulties with ADL, IADL and mobility is shown in Figure 4.6. There was a clear increase over time in the number of reported difficulties with ADL, IADL and mobility reported by all participants as they age. Study members who fell during follow-up have a greater number of difficulties initially and this number increases more rapidly over time than in the comparison group; that is, people having suffered a severe fall experience a more rapid functional decline. This means that limitation in activities of daily living or mobility are both a determinant and a consequence of experiencing a severe fall.

Regarding cognitive function assessed by memory, there is also an overall linear decline over time such that study members who fell had a poorer memory at any time point (Figure 4.7 and Table 4A.8). The overall decrease is also stronger in the severe fall group relative to the comparison group. This suggests that people vulnerable to severe falls have poorer cognitive function, and that the decline in cognitive function over time is stronger around the time of falling and in subsequent years.

Figure 4.4. Trajectory of walking speed (m/s) from wave 4 to wave 8 according to severe fall status at waves 5, 6 or 7

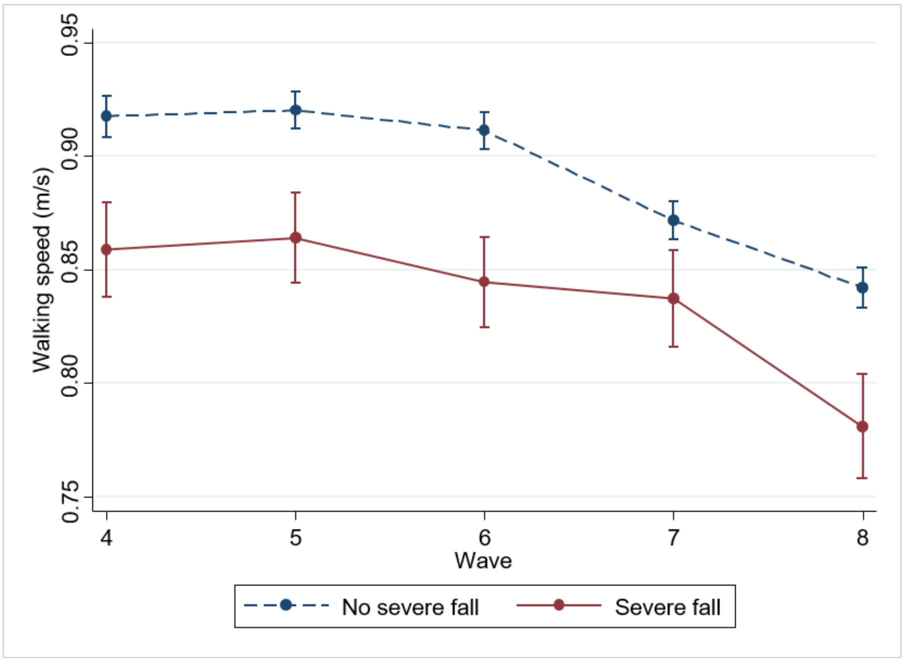


Figure 4.5. Trajectory of physical activity levels (score 1–5, where higher is more active) from wave 4 to wave 8 according to severe fall status at waves 5, 6 or 7

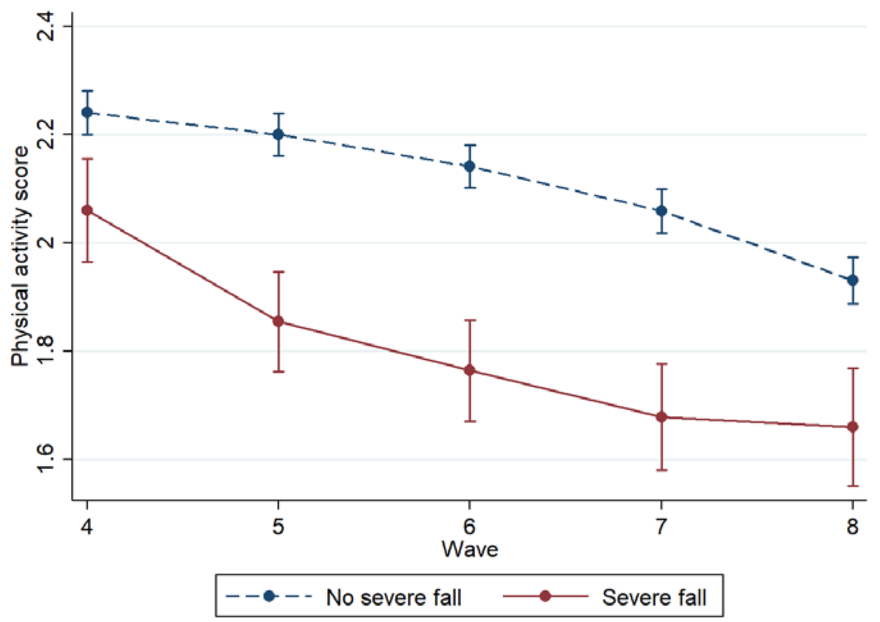
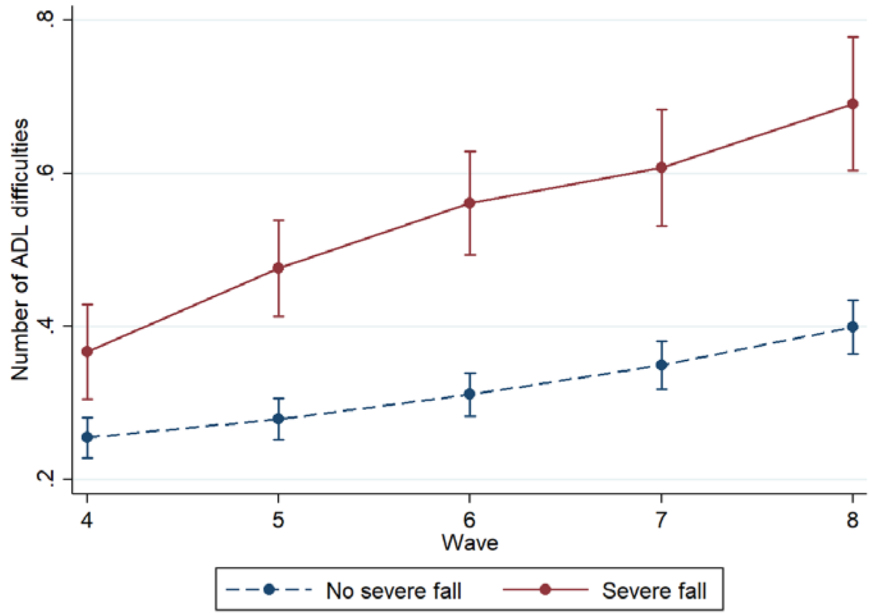
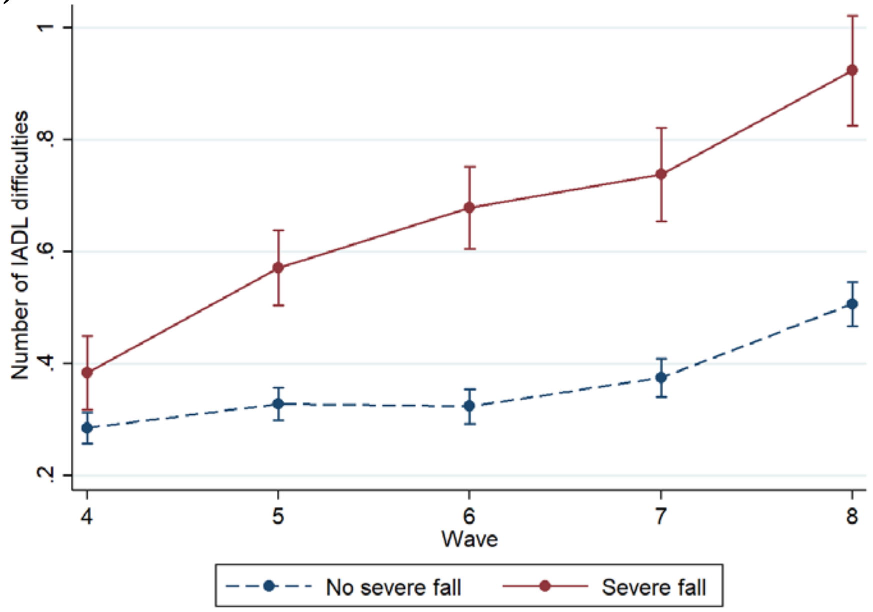


Figure 4.6. Trajectories from wave 4 to wave 8 of the number of difficulties with ADLs, IADLs and mobility in people who did and did not experience a severe fall between waves 5 and 7

a) ADLs



b) IADLs



c) Mobility

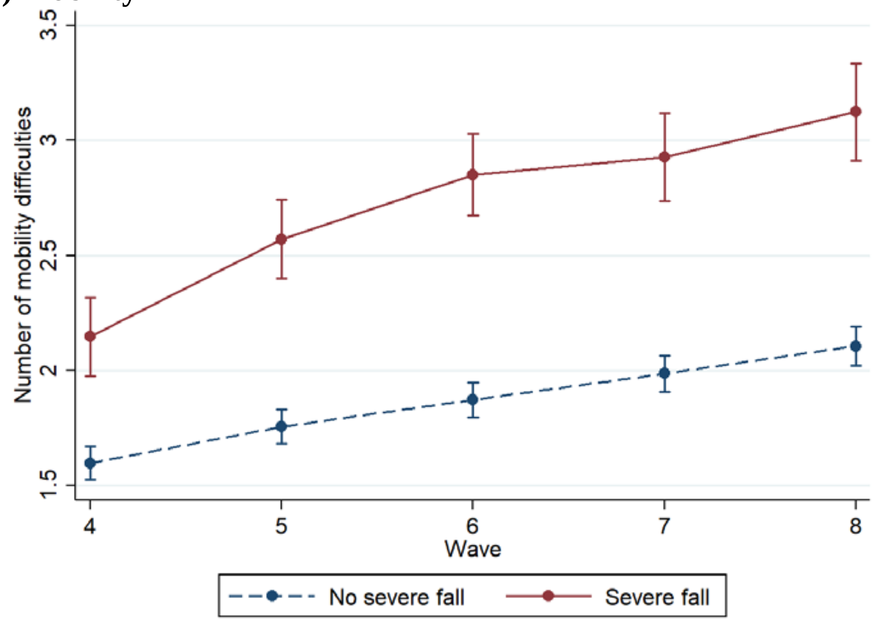
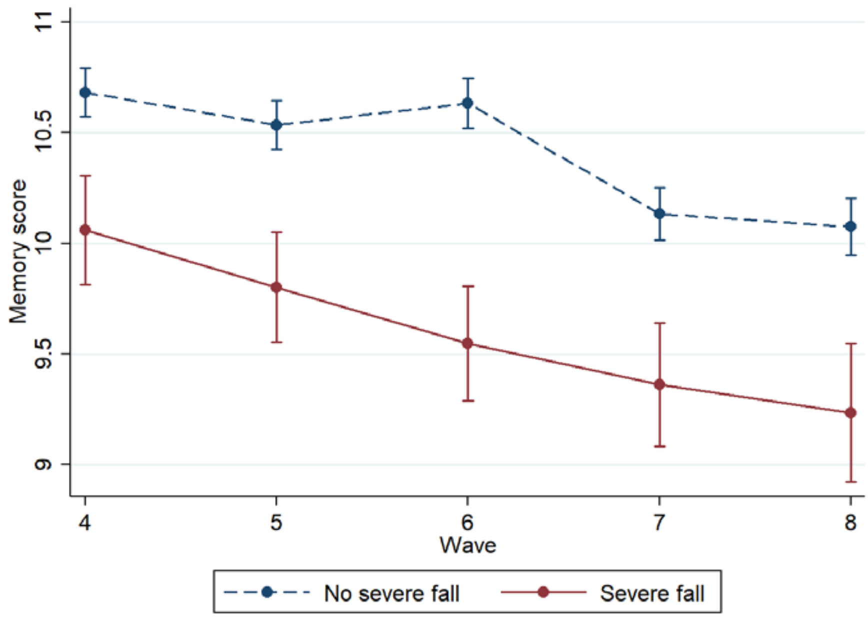


Figure 4.7. Trajectory of cognitive function (memory score) from wave 4 to wave 8 according to severe fall status at waves 5, 6 or 7



4.3.4 Social engagement

The last dimension studied in the context of the consequences of a serious fall is social capital, which includes social engagement in organisations, loneliness, number of close relationships, and frequency of contact with members of the network.

As shown in Figure 4.8, there was little difference between the fall/non-fall groups, and little evidence of a change over time in the probability of not being part of any social organisations. Social participation at baseline is very similar in the two groups. People who fall seem to withdraw from engagement with social organisations but no more than the comparison group – suggesting it is a function of age – and this change was not statistically significant (see Table 4A.8).

Figure 4.9 shows that loneliness is generally constant, with a slight decrease at wave 7 in both groups. The 'severe fall' group constantly report greater loneliness at every wave, including at baseline, but there is no evidence of a differential trajectory with the comparison group. This suggests that although loneliness is a risk factor for severe falls, loneliness does not increase as a consequence of falling.

The number of close relationships (Figure 4.10) seems to decline slightly over time overall and the trajectories are quite similar by fall status – although there appear to be more variations in the 'fall' group. There is little evidence that falling is associated with a reduction in the number of close relationships.

Finally, we modelled the probability for a person to have contact with their family and friends less than once or twice a month (Figure 4.11). This probability was overall quite low in ELSA and increased significantly over time for all participants. However, those who experienced severe falls, and those who did not, did not appear to differ in the amount of contact they experienced with their friends and family.

Figure 4.8 Trajectory of the probability of participants not taking part in any social organisation from wave 4 to wave 8, according to severe fall status at waves 5, 6 or 7

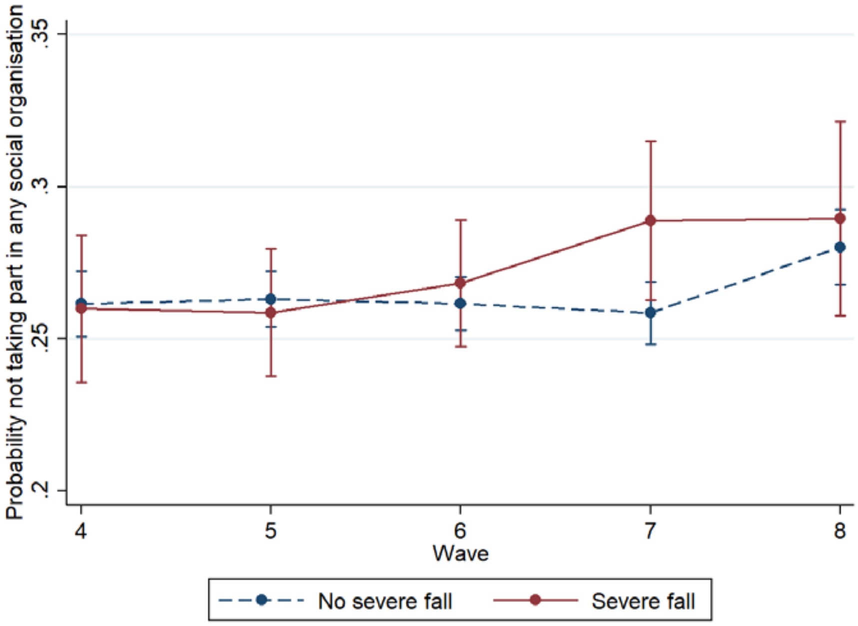


Figure 4.9. Trajectory of loneliness score (a higher score means more loneliness) from wave 4 to wave 8, according to severe fall status at waves 5, 6 or 7

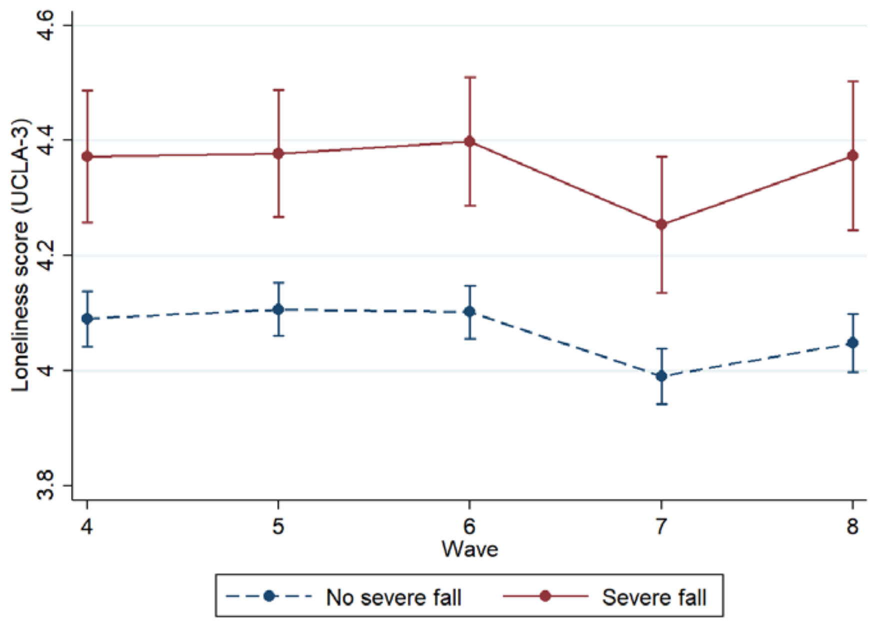


Figure 4.10. Trajectory of the number of close relationships (friends, children, relatives) reported from wave 4 to wave 8 in participants, according to severe fall status at waves 5, 6 or 7

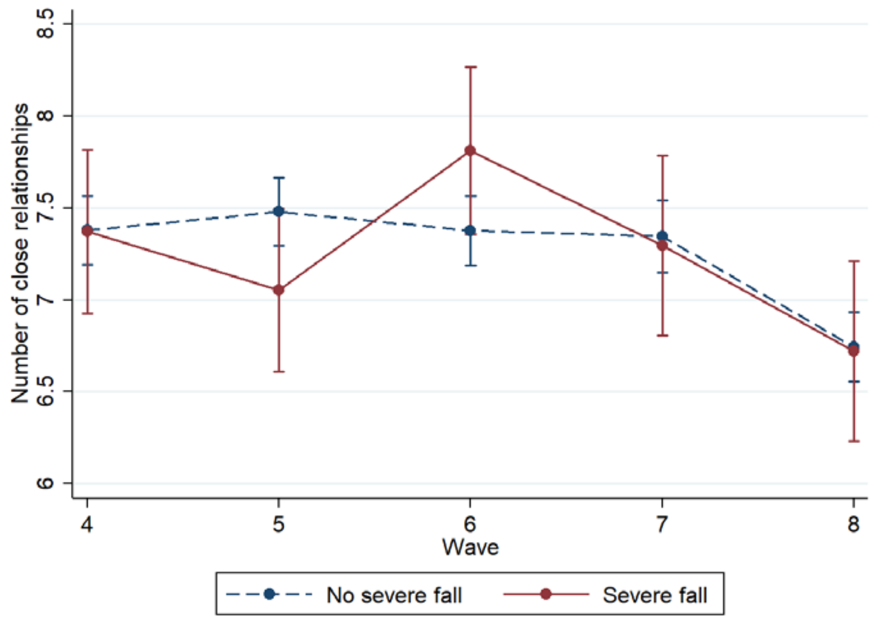
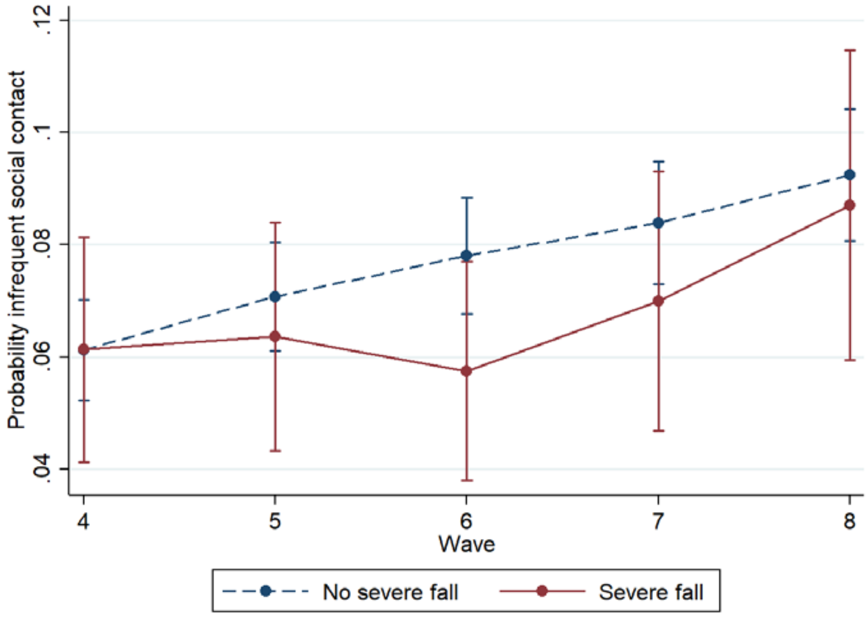


Figure 4.11. Trajectory of the probability of having contact with family and friends less than twice a month, from wave 4 to wave 8, according to severe fall status at waves 5, 6 or 7



4.3.5 Employment

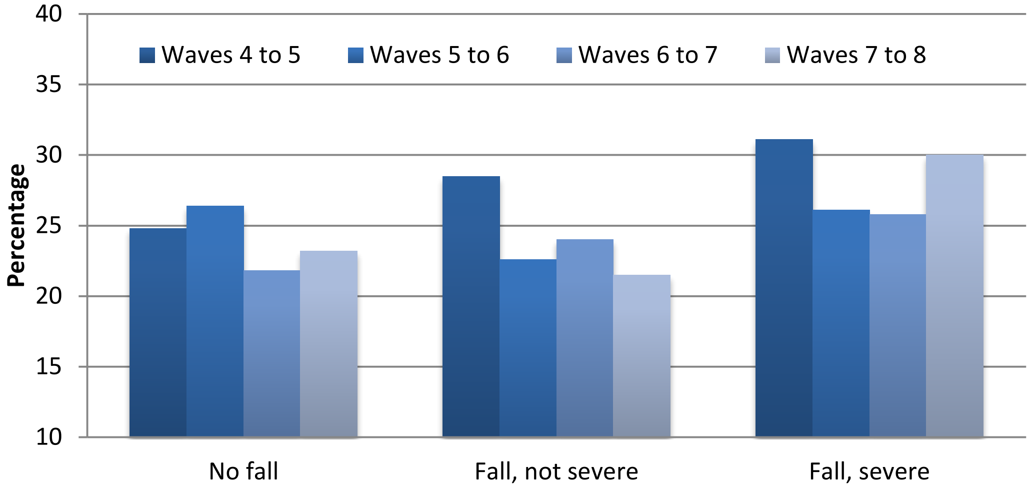
To assess whether experiencing a severe fall can influence labour market exit, we used a sample of participants who were in paid work at a given wave, and we provide the proportion of people who exited the labour market at the following wave. We give the proportion of people who report a severe fall at the following wave, those who report having fallen but the fall was not severe, as well as those who did not fall at all. We repeat this analysis from waves 4 to 5, from waves 5 to 6, from waves 6 to 7 and from waves 7 to 8. The proportions are adjusted for age and gender. The sample for each wave is given in Table 4.1.

The results are given in Figure 4.12. We observed a slightly higher proportion of participants in work at a given time who exited the labour market at subsequent waves in the 'severe fall' group than in the 'no fall' group (except for the transition from wave 5 to wave 6). Overall, however, there was no statistically significant differences between the groups.

Table 4.1. Number of people in paid employment at each wave according to whether they experienced or not a fall

	Fall at the following wave		
	No fall	Fall, not severe	Fall, severe
In employment at wave 4	1,331	289	82
In employment at wave 5	1,422	283	80
In employment at wave 6	1,382	273	84
In employment at wave 7	1,306	269	97

Figure 4.12. Proportion of participants in employment at a given wave who exit the labour market at the following wave, by falling status



4.3.6 Conclusions

In this section, we have identified some consequences of experiencing a severe fall. The physical and cognitive function are the factors that appear to be most affected by falling such that the steepest decline was apparent for walking speed, physical activity and memory, in people who experienced a severe fall relative to those who did not. We found little evidence that falling had consequences for well-being, social engagement or labour market exit.

Box 4.1. What does it mean for Mrs J?

Mrs J was a 76-year-old widow when she reported a severe fall in 2010. After her fall, her walking speed fell by 16% over the next two years, and by 42% four years later. Her physical activity also declined as she became sedentary during the same period, having previously been moderately active. She also showed a decrease in her performance on a memory test, with her total score almost halving over the six years of follow-up.

4.4 Conclusions

Based on the most recent wave of data collection in ELSA (2016–17), we have shown that among men and women aged 60 years and above, the prevalence of falls is high: 27% of people experienced a fall, and for almost 9% of the study sample, these could be classified as ‘severe’. While we did not have extensive data on health service utility following a reported fall, of note is that more than 80% of study members – around four in five people who experienced a fall – reported that they had not received medical follow-up to ascertain the cause of their fall. The National Institute for Health and Care Excellence (NICE) guidelines and quality standards for assessments after falls – so-called multifactorial falls risk assessment – are wide-ranging and include evaluation of urinary incontinence, visual impairment and cognitive function (NICE, 2015). Additionally, appraisals of gait, balance and mobility, strength and muscle weakness also feature but, based on the present results, these are not being implemented widely. To our knowledge, there are few similar data collected in the UK with which to draw comparison, although in the Fracture Liaison Service Database (FLS-DB) clinical audit, only 4% of older people who present for medical attention to their *general practice* because of a fall then go on to have a multifactorial falls risk assessment.

The fact that falls are known to be prevalent in older people led us to explore their multi-domain prediction (primary prevention) and consequences (prognosis) using repeat measurements of data in ELSA. The pernicious and varied consequences of severe falls – those serious enough to warrant medical treatment – included, perhaps unsurprisingly, reduced levels of mobility, walking speed, physical activity and ADLs. More subtle, but no less important, effects were also evident for cognitive function, as indexed by memory. This may result directly from damage to the brain, given that head injuries are common in falls. In Box 4.1, we attempt to 'lift' these summary results by giving a real-life example of an anonymised person from ELSA.

This burden of experiencing a severe fall adds further imperative to understanding the prevention of falls. We found that key predictors included: not living with a partner, reporting loneliness, having depressive symptoms, problems completing ADLs, urinary incontinence, low walking speed, low levels of physical exertion and multiple morbidity. These effects were not always universal to men and women, however. For instance, the association of different markers of social isolation with falls risk were typically more marked for men than women.

Policy implications

While the role of social isolation and loneliness in elevating dementia risk (Rafnsson et al., 2017), decreasing resistance to infection (Cornwell and Waite, 2009) and shortening life expectancy (Holt-Lunstad, Smith and Layton, 2010) has been reasonably well explored in the scientific literature – there are even rather surprising claims that loneliness is as damaging to 'health' as smoking 15 cigarettes per day (Holt-Lunstad et al., 2010) – links with falls have been relatively little examined. Importantly, it appeared that social isolation can be modified. Interventions comprise programmes aimed at the individual (e.g. computer training, animal companionship) and at groups (e.g. reminiscence therapy, videoconferencing), and have been both in a community (e.g. adult education centres) and in a supported-living environment (e.g. warden-controlled flats) (Dickens et al., 2011; Franck, Molyneux and Parkinson, 2016; Landeiro et al., 2017). Whilst the quality of studies conducted in this sphere is mixed (Dickens et al., 2011; Franck et al., 2016), enhancements in social, mental and physical functioning were typically seen across most trials, with the strongest effects seemingly in group-orientated interventions rather than those administered at the level of the individual (Dickens et al., 2011; Franck et al., 2016). Owing to the growing body of evidence and calls to action from special interest groups, including the Jo Cox Commission on Loneliness[20] and the Campaign to End Loneliness,[21] social

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[20] See 'Combatting loneliness one conversation at a time: a call to action', available at https://www.jocoxloneliness.org/pdf/a_call_to_action.pdf.

[21] See https://www.campaigntoendloneliness.org/loneliness-research/.

isolation, including loneliness, is currently firmly on the policy agenda, such that a government minister with this specific remit was appointed in early 2018. The Fulfilling Lives: Ageing Better programme has invested more than £70 million in recent years into a range of local activities designed to reduce isolation, many of which have social elements as well as physical activity.[22] Whether improvements in social isolation following an intervention will reduce the risk of falls has not, to our knowledge, been tested in the context of a trial.

Both physical inactivity and low walking speed were related to falls risk herein. The fact that physical inactivity has been consistently shown to be a potential risk factor for falls in observational studies (Gregg, Pereira and Caspersen, 2000) has led to its efficacy being explored in aetiological trials. A recent Cochrane Review suggested that exercise interventions in community-dwelling older people, and those living in assisted residences, reduce the proportion of people having one or more falls (Gillespie et al., 2012). In particular, balance-challenging activities and those of higher intensity – walking in itself appears to be insufficient – appear to yield the strongest degree of fall prevention, irrespective of whether they are conducted in a group or home setting. As has also been demonstrated in the field of cardiovascular disease (Ebrahim and Smith, 1997), there is also a suggestion that exercise as a sole intervention is as effective as a multifaceted intervention (Campbell and Robertson, 2007; Gillespie et al., 2012).

There is extensive evidence that people who are less affluent experience a greater risk of an array of adverse health outcomes, including cardiovascular disease and premature mortality. These social inequalities are also present among the elderly and are most marked by the socio-economic indicator of wealth (Zaninotto et al., 2013; Acciai, 2018). In our present analyses, however, there was no apparent association between wealth and severe falls. It is plausible that wealth may not be the best indicator in this context: area-based measures, which capture, for instance, poorly maintained pavements and curbs, suboptimal lighting in public places, fear of crime and community distrust, may have greater predictive capacity (Lo et al., 2016). Such socio-economic proxies may also capture characteristics of housing (e.g. age), such that older buildings may be less likely to comply with present-day regulations for electrical and heating systems and have other safety hazards that are linked with an increased risk of falls (Ryu et al., 2017).

Study strengths and weaknesses

The ELSA has some strengths in the context of the present analyses, including the repeat assessment of falls, the wide-ranging collection of collateral data, which capture social, physical, psychological and behavioural predictors and outcomes, and the representative nature of the study members, which lends generalisability to our estimates of burden as based on prevalence. The study and our analyses are not of course without their weaknesses. Some shortcomings include the self-reported nature of the falls data. For instance, we were not able to find studies exploring the agreement of self-reported falls

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[22] See https://www.biglotteryfund.org.uk/global-content/programmes/england/fulfilling-lives-ageing-better.

with routinely collected clinical data, in contrast to the extensive work examining the psychometric properties of other important health events in older adults, such as cancer (Bergmann et al., 1998). Thus, the validity of the falls data herein is unclear. With hospital admissions records for falls shortly to become available, we plan to address this issue.

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Appendix 4A

Tables on the determinants and consequences of falling at older ages

Table 4A.1. Prevalence of falls, by age group and wave of assessment among men

	Age group: men			
	60–69	70–79	80+	Total
No falls				
Wave 4 (%)	79.8	77.1	63.7	76.4
(95% CI)	(77.6, 81.8)	(74.3, 79.7)	(58.7, 68.5)	(74.8, 78.0)
Wave 8 (%)	80.2	75.6	63.6	75.8
(95% CI)	(77.7, 82.4)	(72.7, 78.2)	(58.9, 68.0)	(74.1, 77.5)
Fall, not severe				
Wave 4 (%)	16.7	16.5	27.7	18.3
(95% CI)	(14.9, 18.7)	(14.3, 19.0)	(23.4, 32.5)	(16.9, 19.8)
Wave 8 (%)	15.4	18.5	22.7	17.7
(95% CI)	(13.4, 17.7)	(16.1, 21.0)	(19.0, 26.8)	(16.2, 19.2)
Fall, severe				
Wave 4 (%)	3.5	6.4	8.6	5.2
(95% CI)	(2.6, 4.6)	(5.1, 8.2)	(6.1, 11.9)	(4.5, 6.1)
Wave 8 (%)	4.4	6.0	13.8	6.5
(95% CI)	(3.3, 5.8)	(4.7, 8.0)	(10.6, 17.7)	(5.6, 7.6)
Bases				
Weighted *N*				
Wave 4	1,570	1,045	405	3,020
Wave 8	1,235	1,083	517	2,835
Unweighted *N*				
Wave 4	1,570	1,045	405	3,020
Wave 8	1,508	1,175	551	3,234

Table 4A.2. Prevalence of falls, by age group and wave of assessment among women

	Age group: women			
	60–69	70–79	80+	Total
No falls				
Wave 4 (%)	73.8	70.8	61.7	70.3
(95% CI)	(71.6, 75.8)	(68.1, 73.4)	(57.5, 65.7)	(68.7, 71.8)
Wave 8 (%)	74.1	69.6	61.0	69.8
(95% CI)	(71.7, 76.3)	(66.9, 72.2)	(57.0, 64.8)	(68.2, 71.4)
Fall, not severe				
Wave 4 (%)	18.6	20.1	22.9	20.0
(95% CI)	(16.9, 20.5)	(17.9, 22.5)	(19.6, 26.6)	(18.7, 21.4)
Wave 8 (%)	17.7	20.6	21.5	19.4
(95% CI)	(15.8, 19.7)	(18.36, 23.1)	(18.4, 24.9)	(18.1, 20.8)
Fall, severe				
Wave 4 (%)	7.6	9.1	15.4	9.7
(95% CI)	(6.4, 9.0)	(7.5, 11.0)	(12.6, 18.7)	(8.7, 10.8)
Wave 8 (%)	8.3	9.8	17.5	10.7
(95% CI)	(6.9, 9.9)	(8.1, 11.7)	(14.5, 21.0)	(9.6, 11.9)
Bases				
Weighted *N*				
Wave 4	1,861	1,259	611	3,731
Wave 8	1,614	1,215	759	3,588
Unweighted *N*				
Wave 4	1,861	1,259	611	3,731
Wave 8	1,847	1,249	771	3,867

Table 4A.3. Health professional follow-up for severe falls, by age group and wave of assessment among men

	Age group: men			
	60–69	70–79	80+	Total
No health professional follow-up received				
Wave 4 (%)	78.3	73.4	70.5	74.9
(95% CI)	(70.7, 84.3)	(64.9, 80.5)	(59.4, 79.5)	(70.0, 9.2)
Wave 8 (%)	83.7	83.0	77.9	82.0
(95% CI)	(78.0, 88.1)	(77.5, 87.4)	(70.3, 83.9)	(78.6, 84.9)
Balance and/or strength test administered				
Wave 4 (%)	11.3	9.7	15.0	11.7
(95% CI)	(7.2, 17.4)	(5.5, 16.6)	(8.9, 24.3)	(8.7, 15.5)
Wave 8 (%)	7.8	8.8	11.5	9.1
(95% CI)	(5.0, 11.9)	(5.9, 13.1)	(7.4, 17.6)	(7.1, 11.6)
Additional tests administered (e.g. heart, brain)				
Wave 4 (%)	2.8	9.6	7.2	5.9
(95% CI)	(0.8, 8.8)	(5.4, 16.4)	(2.8, 17.3)	(3.7, 9.4)
Wave 8 (%)	3.0	1.2	3.4	2.5
(95% CI)	(1.2, 7.4)	(0.4, 3.8)	(1.3, 8.4)	(1.4, 4.5)
Balance and/or strength test *and* additional tests				
Wave 4 (%)	7.7	7.3	7.3	7.4
(95% CI)	(4.3, 13.3)	(4.0, 12.8)	(3.3, 15.6)	(5.2, 10.7)
Wave 8 (%)	5.6	6.9	7.2	6.4
(95% CI)	(3.2, 9.6)	(4.0, 11.6)	(3.8, 13.2)	(4.6, 8.9)
Bases				
Weighted *N*				
Wave 4	179	135	87	401
Wave 8	248	262	176	686
Unweighted *N*				
Wave 4	180	135	87	402
Wave 8	285	281	187	753

Note: Estimates weighted for non-response.

Table 4A.4. Health professional follow-up for severe falls, by age group and wave of assessment among women

	Age groups: women			
	60–69	70–79	80+	Total
No health professional follow-up received				
Wave 4 %	75.8	77.2	78.1	76.9
(95% CI)	(70.2, 80.5)	(70.6, 82.6)	(70.3, 84.3)	(73.3, 80.1)
Wave 8 %	83.8	79.9	73.7	79.7
(95% CI)	(79.4, 87.4)	(75.2, 83.7)	(67.5, 79.2)	(76.9, 82.3)
Balance and/or strength test administered				
Wave 4 %	15.0	15.2	13.3	14.6
(95% CI)	(11.2, 19.7)	(10.8, 21.0)	(8.6, 19.8)	(11.9, 17.6)
Wave 8 %	9.2	11.3	15.3	11.6
(95% CI)	(6.5, 12.8)	(8.3, 15.3)	(11.0, 20.9)	(9.6, 13.9)
Additional tests administered (e.g. heart, brain)				
Wave 4 %	3.2	2.8	3.1	3.0
(95% CI)	(1.7, 5.8)	(1.1, 6.9)	(1.1, 8.2)	(1.9, 4.8)
Wave 8 %	2.5	4.2	3.1	3.2
(95% CI)	(1.2, 5.0)	(2.5, 6.8)	(1.5, 6.4)	(2.3, 4.6)
Balance and/or strength test *and* additional tests				
Wave 4 %	6.1	4.8	5.6	5.5
(95% CI)	(3.7, 9.9)	(2.4, 9.3)	(2.7, 11.2)	(3.9, 7.8)
Wave 8 %	4.5	4.6	7.8	5.5
(95% CI)	(2.8, 7.3)	(2.8, 7.4)	(5.0, 11.9)	(4.2, 7.1)
Bases				
Weighted n				
Wave 4	288	219	152	659
Wave 8	422	370	271	1063
Unweighted n				
Wave 4	288	219	152	659
Wave 8	457	380	275	1,112

Note: Estimates weighted for non-response.

Table 4A.5. Logistic regression for the association between demographic characteristics and severe falls

	All (*N* = 3,342)	**Men (*N* = 1,505)**	**Women (*N* = 1,837)**
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age	1.05 (1.04,1.06)***	1.06 (1.04,1.08)***	1.04 (1.03,1.06)***
Men	1.0		
Women	1.90 (1.61, 2.25)***		
Marital status			
Married	1.0	1.0	1.0
Separated/divorced	1.15 (0.88,1.49)	1.15 (0.70,1.87)	1.14 (0.84,1.55)
Widowed	1.23 (0.98,1.54)	1.67 (1.07, 2.61)*	1.14 (0.88,1.48)
Never married	1.14 (0.77,1.69)	1.05 (0.57, 1.95)	1.23 (0.73, 2.07)
Living with a partner			
Yes	1.0	1.0	1.0
No	1.20 (1.01, 1.44)*	1.39 (1.02, 1.91)*	1.14 (0.92, 1.41)
Wealth			
1 Low	1.0	1.0	1.0
2	0.82 (0.61, 1.09)	0.74 (0.44,1.24)	0.85 (0.60, 1.21)
3	0.81 (0.62, 1.06)	0.76 (0.48, 1.23)	0.83 (0.59, 1.15)
4	0.82 (0.63, 1.08)	0.83 (0.53, 1.31)	0.81 (0.58, 1.13)
5 High	0.81 (0.62, 1.06)	0.80 (0.51, 1.25)	0.81 (0.58, 1.13)
Social isolation	1.03 (0.89, 1.19)	1.02 (0.87, 1.20)	0.94 (0.83, 1.07)
Loneliness	1.12 (1.06, 1.18)***	1.22 (1.10, 1.35)***	1.08 (1.01, 1.16)*

Note: All models adjusted for age/gender. Models for social isolation/loneliness are based on a smaller sample (*N* = 3,045) due to questions from self-completion. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4A.6. Logistic regression for the association between health behaviour risk factors and severe falls

	All	Men	Women
	OR (CI 95%)	OR (CI 95%)	OR (CI 95%)
BMI			
Normal	1.0	1.0	1.0
Overweight	1.15	1.11	1.16
	(0.91, 1.44)	(0.75, 1.65)	(0.87, 1.54)
Obese	1.14	1.11	1.15
	(0.89, 1.45)	(0.71, 1.73)	(0.86, 1.54)
Alcohol use			
Not frequent	1.0	1.0	1.0
Daily	1.15	1.13	1.17
	(0.93, 1.44)	(0.82, 1.53)	(0.87, 1.57)
Smoking			
Never	1.0	1.0	1.0
Ex-smoker	1.02	1.08	0.99
	(0.84, 1.24)	(0.77, 1.51)	(0.78, 1.26)
Current	1.27	1.38	1.21
	(0.91, 1.78)	(0.79, 2.42)	(0.80, 1.83)
Physical activity			
Any activity	1.0	1.0	1.0
Sedentary	1.81	1.31	2.20
	(1.14, 2.87)**	(0.60, 2.88)	(1.22, 3.97)**

Note: All models adjusted for age/gender/living with a partner/wealth quintiles. Models are based on a smaller sample (N = 2,748) due to missing covariates. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4A.7. Logistic regression for the association between health conditions and severe falls

	All	Men	Women
	OR (CI 95%)	OR (CI 95%)	OR (CI 95%)
CHD			
No	1.0	1.0	1.0
Yes	1.38 (1.06, 1.83)*	1.17 (0.76, 1.79)	1.58 (1.09, 2.31)*
Diabetes			
No	1.0	1.0	1.0
Yes	0.74 (0.54, 1.02)	0.59 (0.35, 0.99)	0.85 (0.56, 1.28)
Stroke			
No	1.0	1.0	1.0
Yes	1.60 (1.06, 2.42)*	1.67 (0.88, 3.17)	1.53 (0.89, 2.61)
Arthritis			
No	1.0	1.0	1.0
Yes	1.35 (1.13, 1.61)**	1.40 (1.03, 1.89)*	1.34 (1.08, 1.66)**
Balance			
Completed (10 seconds)	1.0	1.0	1.0
Not completed	1.47 (0.87, 2.49)	2.53 (1.21, 5.74)*	1.12 (0.58, 2.17)
Walking speed	0.73 (0.55, 0.95)*	0.73 (0.47, 1.14)	0.72 (0.51, 1.02)
Hearing			
Excellent/very good	1.0	1.0	1.0
Fair/poor	1.11 (0.90, 1.37)	1.20 (0.88, 1.65)	1.06 (0.79, 1.42)
Eyesight			
Excellent/very good	1.0	1.0	1.0
Fair/poor/blind	1.11 (0.85, 1.46)	1.44 (0.92, 2.26)	0.95 (0.67, 1.34)
Incontinence			
No	1.0	1.0	1.0
Yes	1.27 (1.01, 1.60)*	1.54 (0.94, 2.55)	1.21 (0.93, 1.57)
ADL			
None	1.0	1.0	1.0
1+	1.78 (1.43, 2.23)***	1.70 (1.17, 2.45)**	1.86 (1.40, 2.47)***
IADL			
None	1.0	1.0	1.0
1+	1.48 (1.18, 1.84) **	1.51 (1.03, 2.21) *	1.48 (1.13, 1.94) **
Depressive symptoms			
No	1.0	1.0	1.0
Yes	1.43 (1.10, 1.85) **	1.74 (1.05, 2.89) *	1.34 (0.99, 1.81)
Cognition: memory	0.99 (0.97, 1.02)	1.01 (0.96, 1.06)	0.99 (0.95, 1.02)

Note: All models adjusted for age/gender/living with a partner/wealth quintiles. Models are based on a smaller sample (*N* = 3,061) due to missing covariates. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4A.8. Significance of the effects of group (severe fall, no severe fall), time, and the interaction of group by time on each of the outcomes specified

Factor	All				Men				Women			
	N	group	time	group *time	*N*	group	time	group *time	*N*	group	time	group *time
Psychological well-being												
CASP-19	4,246	<0.001	<0.001	0.27	1,982	<0.001	<0.001	0.46	2,265	0.05	<0.001	0.36
Life satisfaction	4,277	0.02	0.001	0.5	1,992	0.001	0.08	0.53	2,286	0.81	0.01	0.54
CESD	4,330	<0.001	<0.001	0.97	2,025	<0.001	<0.001	0.65	2,306	0.07	0.005	0.85
Physical and cognitive function												
ADL count	4,331	<0.001	<0.001	<0.001	2,025	<0.001	<0.001	0.001	2,307	<0.001	<0.001	0.01
IADL count	4,331	<0.001	<0.001	<0.001	2,025	<0.001	<0.001	<0.001	2,307	<0.001	<0.001	<0.001
Mobility count	4,331	<0.001	<0.001	<0.001	2,025	<0.001	<0.001	<0.001	2,307	<0.001	<0.001	0.07
Gait speed	4,259	0.03	<0.001	0.01	1,997	0.1	<0.001	0.04	2,262	0.12	<0.001	0.05
Physical activity	4,331	0.002	<0.001	<0.001	2,025	0.03	<0.001	0.05	2,307	0.03	<0.001	0.01
Memory	4,331	<0.001	<0.001	0.001	2,025	0.003	<0.001	0.09	2,307	0.003	<0.001	0.007
Psychosocial												
Social organisation	4,270	0.95	0.42	0.2	1,992	0.79	0.16	0.11	2,279	0.8	0.93	0.50
Loneliness (UCLA)	4,275	<0.001	<0.001	0.82	1,993	<0.001	0.05	0.33	2,283	0.06	<0.001	0.53
Close relationships	4,206	0.91	<0.001	0.69	1,949	0.2	0.01	0.26	2,258	0.32	<0.001	0.82
Frequency contact	4,282	0.95	<0.001	0.6	1,996	0.84	0.11	0.34	2,287	0.85	0.01	0.48

5. Methodology

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This chapter presents a summary of the survey methodology for the eighth wave (2016–17) of the English Longitudinal Study of Ageing (ELSA). It includes a brief account of the sample design, the content of the interview and the approach to fieldwork. It also provides basic information about survey response rates, and the weighting strategies used in this report. Further detail is provided in the ELSA technical report (available Autumn 2018), which can be accessed via the ELSA website (http://www.elsa-project.ac.uk).

A summary of the key points relating to wave 8 is given below.

1) The wave 8 (2016–17) core questionnaire was similar to that used in the previous waves. Some content was rotated back on and some off the questionnaire, but the structure and the majority of content was the same.

2) As in previous waves, participants who completed the main ELSA interview were asked to complete a self-completion questionnaire. The content was broadly the same as in previous waves.

3) Participants who completed the main ELSA interview were also asked to complete a sexual activity self-completion questionnaire. This was a cut-down version of the questionnaire included at wave 6 with different versions for men and women.

4) A nurse visit was offered to a subsample of core members who took part in an interview in person at wave 8. The subsample was selected to oversample respondents who had taken part in all previous nurse-visit waves where they had been eligible.

5) People from five existing ELSA cohorts made up the ELSA sample issued at wave 8. There was no refreshment (new) sample issued at wave 8.

    Cohort 1[23] born on or before 29 February 1952. Selected from Health Survey for England (HSE) 1998, 1999 and 2001. First interviewed at ELSA wave 1 (2002–03) aged 50 and above. Cohort 1 core members and their partners represented 55% of all issued cases at wave 8.

    Cohort 3 born between 1 March 1952 and 1 March 1956. Selected from four years of HSE (2001–04). First interviewed at ELSA wave 3 (2006–07). Cohort 3 core members and their partners represented 12% of all issued cases at wave8.

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[23] All longitudinal analysis in this report is based on Cohort 1 core members interviewed at every wave of ELSA.

Cohort 4 born between 1 March 1933 and 28 February 1958. Selected from HSE 2006. First interviewed at ELSA wave 4 (2008–09) aged 50–74. Cohort 4 core members and their partners represented 19% of all issued cases at wave 8.

Cohort 6 born between 1 March 1956 and 28 February 1962. Selected from HSE 2009, 2010 and the first half of 2011. First interviewed at ELSA wave 6 (2012–13) aged 50–55. Cohort 6 core members and their partners represented 10% of all issued cases at wave 8.

Cohort 7 born between 1 March 1962 and 28 February 1964. Selected from HSE 2011 and 2012. First interviewed at ELSA wave 7 (2014–15) aged 50–51. Cohort 7 core members and their partners represented 4% of all issued cases at wave 8.

6) A total of 8,445 main interviews were completed at wave 8 across these five cohorts. Much of the analysis in this chapter focuses on core members. Core members are defined as age-eligible (50+) sample members selected from the HSE who participated the first time they were approached to join the ELSA study. They represent the core element of the continuing ELSA sample. At wave 8, a total of 7,223 interviews (86%) were conducted with core members. Specifically, 4,219 interviews were with Cohort 1 core members from the original wave 1 sample, 723 were with core members from Cohort 3, 1,470 were with core members from Cohort 4, 582 were with core members from Cohort 6, and 229 were with core members from Cohort 7. The remaining 1,222 interviews (14%) were with partners of core members (who can be further categorised into core, young, old or new partners).

5.1 Sample design

The ELSA sample is selected to be representative of people aged 50 and above, living in private households in England. It was drawn from households that had previously responded to the HSE so that the study could benefit from data that had already been collected. Some background information about the HSE is provided below.

5.1.1 Health Survey for England

The HSE is an annual cross-sectional household survey that gathers a wide range of health data and biometric measures. Each of the main HSE samples for ELSA was originally drawn in two stages. First, postcode sectors were selected from the Postcode Address File, stratified by health authority and the proportion of households in the non-manual socio-economic groups. Addresses were then selected systematically from each sector and up to ten adults and two children in each household were deemed eligible for interview.

Eligible individuals at the HSE were asked to participate in a personal interview, followed by a nurse visit. Further details about the HSE years used to select the ELSA sample are available from the HSE Methodology Reports (Erens and Primatesta, 1999; Erens, Primatesta and Prior, 2001; Prior et al., 2003; Sproston and Primatesta, 2003, 2004; Sproston and Mindell, 2006; Craig and Mindell, 2008, 2011, 2012, 2013; Craig and Hirani, 2010).

5.1.2 ELSA Cohort 1

The original cohort at wave 1 (persons born on or before 29 February 1952) were selected from households who had previously responded to the HSE in 1998, 1999 and 2001. The ELSA wave 1 interview took place in 2002–03, providing the baseline for the study. Overall, there were 12,099 achieved interviews at wave 1, and of these 11,391 became Cohort 1 core members. Interviews with Cohort 1 core members and their partners were attempted every two years following wave 1 (wave 2 in 2004–05, wave 3 in 2006–07, wave 4 in 2008–09, wave 5 in 2010–11, wave 6 in 2012–13, wave 7 in 2014–15 and wave 8 in 2016–17).

5.1.3 ELSA Cohort 3

At wave 3, a ‘refresher’ cohort of people just entering their 50s (born between 1 March 1952 and 1 March 1956) was introduced (Cohort 3). The sample used to form Cohort 3 was selected from four survey years of the HSE (2001 to 2004). There were 1,733 Cohort 3 interviews at wave 3 and, of these, 1,275 became core members. The majority of Cohort 3 core members (87%) came from HSE households issued for the first time at ELSA wave 3; the remaining were mainly younger partners in Cohort 1 households who were reclassified as Cohort 3 core members because they now met the age criteria. There are now six waves of interviews with Cohort 3 core members and their partners (wave 3 in 2006–07, wave 4 in 2008–09, wave 5 in 2010–11, wave 6 in 2012–13, wave 7 in 2014–15 and wave 8 in 2016–17).

5.1.4 ELSA Cohort 4

A cohort of people born between 1 March 1933 and 28 February 1958 (aged 50–74) was added to the wave 1 and wave 3 cohorts in 2008–09 (Cohort 4). The main wave 4 cohort was selected from HSE 2006. There were 2,590 interviews at wave 4 and, of these, 2,291 became Cohort 4 core members. The group of Cohort 4 core members includes 248 people who were mistakenly not issued at wave 3 (as part of Cohort 3) and were followed up for interview at wave 4 instead. Wave 8 represents the fifth wave of interviews with Cohort 4 members and their partners (wave 4 in 2008–09, wave 5 in 2010–11, wave 6 in 2012–13, wave 7 in 2014–15 and wave 8 in 2016–17).

5.1.5 ELSA Cohort 6

At wave 6, a cohort of people born between 1 March 1956 and 28 February 1962 (aged 50–55) was added to the waves 1, 3 and 4 cohorts in 2012–13 (Cohort 6). Cohort 6 was selected from participating individuals in HSE 2009, 2010 and 2011. There were 1,154 Cohort 6 interviews at wave 6 and, of these, 826 became core members. Wave 8 represents the third wave of interviews with Cohort 6 members and their partners (wave 6 in 2012–13, wave 7 in 2014–15 and wave 8 in 2016–17).

5.1.6 ELSA Cohort 7

At wave 7 in 2014–15, a cohort of people born between 1 March 1962 and 28 February 1964 (aged 50–51) was added to the waves 1, 3, 4 and 6 cohorts (Cohort 7). Cohort 7 was selected from participating individuals in HSE 2011 and 2012. There were 456 Cohort 7 interviews at wave 7 and, of these, 301 became core members. Wave 8 is the second wave of interviews with Cohort 7 members.

5.1.7 Eligibility and sample member types

The ELSA sample is made up of ELSA 'core members' as well as non-core member 'partners'. The partners can be further categorised into core partners, younger partners, older partners and new partners.

Figure 5.1 provides a visual summary of the sample types and their assignation rules on ELSA.

At the heart of eligibility to take part in ELSA are core members. As the diagram illustrates, ELSA core members have each met three criteria:

1) fitted the age eligibility criteria of a given ELSA cohort;
2) participated in the sample-origin HSE survey;[24]
3) participated in the first wave of ELSA when invited to join the study.

Core members remain eligible for an ELSA interview (personal or proxy) over the waves, as long as they have not died or moved outside of Great Britain. Core members remain eligible if they have moved to Wales or Scotland, or if they have moved to an institution from their original residential address (within Great Britain).

In addition to core members, all cohabiting partners of core members (who are not core members themselves) are also always eligible to take part. These ELSA partners are further categorised into four different types to illustrate their relative age range and duration of co-habitation with the core member:

- partners already present at the time of the HSE interview are categorised as either 'core partners' (age-eligible but missed the baseline HSE and/or initial wave ELSA interview), 'young partners' (younger than the eligible age range at initial wave) or 'old partners' (older than the eligible age range at initial wave);
- partners of any age who joined the household after the initial HSE interview are called 'new partners', with the 'finstat' variable indicating the wave at which they started cohabitation with the core member (e.g. a C3NP5 finstat value represents a Cohort 3 new partner joining at wave 5).

Finally, people who were age-eligible to become core members, but were not productive or cohabiting with a participating core member at the initial wave of contact, became ineligible to take part in ELSA and were not contacted again for an interview after the initial wave. They are called ELSA 'sample members'. (As a non-participating, ineligible group, sample members do not feature in the archived productive ELSA data.)

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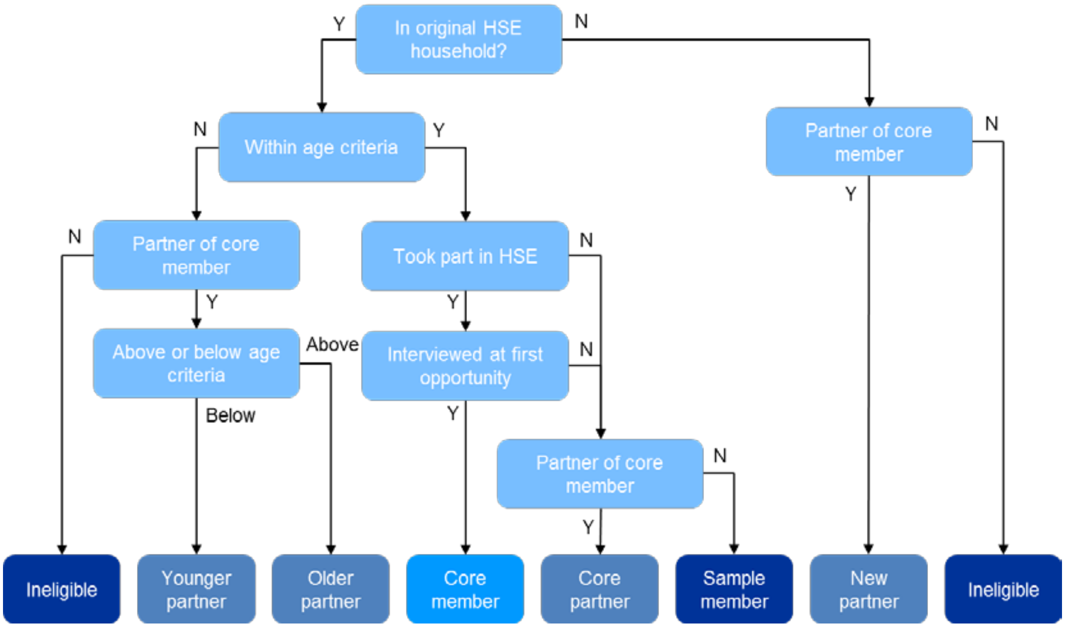
[24] There are a small number of exceptions to this rule; for example, in early ELSA waves, a small number of age-eligible people became core members even though they had not completed the baseline HSE interview.

Figure 5.1. ELSA sample-type assignation rules



5.1.8 Eligibility criteria for wave 8 main interview

The eligibility criteria for a wave 8 interview are given below.

- Individuals were not eligible for follow-up if they had since died, asked not be revisited, or moved out of Great Britain.[25]
- Core members who later move into a care home or institution, or into Scotland or Wales, after their first ELSA interview (baseline wave) remain eligible for all future ELSA interviews. A total of 58 productive institutional interviews were conducted at wave 8.
- An interview was attempted at wave 8 with all ELSA partners found to be living without a core member at wave 8, as a result of becoming separated, divorced or widowed from an ELSA core member since wave 7, so that we could understand their circumstances after this event had occurred.

5.2 Development of wave 8 interview (2016–17)

Extensive discussion took place with ELSA collaborators about what changes were needed for the wave 8 interview and what new topics were to be included.

A dress rehearsal[26] was conducted in January and February 2016 to test both changes to the main interview and nurse questionnaires, and the overall survey

[25] Note that sample members are followed if they move to Scotland or Wales but not if they move to Northern Ireland.

[26] Given the relatively low level of questionnaire changes, there was not a separate questionnaire pilot survey stage at wave 8, unlike on some other waves of ELSA, but the dress rehearsal was used to test both the final proposed questionnaire and survey processes.

process. The dress rehearsal was also used to look in detail at the timing of each component, which led to changes for main stage of wave 8 that included moving the fluid intelligence measures to the nurse visit.

The research team collected feedback from interviewers working on the dress rehearsal regarding the overall survey content and all associated procedures. The insights collected were used to identify final improvements for the implementation of the main stage of wave 8, and to develop a plan for interviewer training.

5.3 Structure and content of the wave 8 interview (2016–17)

As at previous waves, the wave 8 main survey comprised a face-to-face computer-assisted personal interview (CAPI) and a ‘core’ self-completion questionnaire. Wave 8 also included a sexual activity self-completion questionnaire.

Box 5.1 summarises the questionnaire contents.

The structure of the main interview was the same as it had been at previous waves, briefly summarised here.

CAPI questionnaire administration

- In households with one respondent, or where two respondents were interviewed separately, each interview followed the course set out in Box 5.1, though some flexibility was given in the order of the weight and walking speed, income and assets, and housing modules.
- In households where more than one eligible respondent agreed to take part, two individuals could be interviewed in a single session (unless they kept their finances separately and were not prepared to share this information). In these ‘concurrent’ sessions, the two respondents were interviewed alongside each other, but were separated during the course of the interview so that the later modules – assessing cognitive function and collecting information about expectations for the future, psychosocial health, demographic information and consents for linkages to administrative data – could be administered in private.
- Where two or more eligible individuals lived in a household, one was nominated as the respondent for the housing module. Similarly, one individual was asked to be the respondent to report on income and assets on behalf of each benefit unit. However, if two individuals in the same benefit unit kept their finances separately, the data for each financial unit were collected separately.

Self-completion questionnaire administration

- The sexual activity self-completion questionnaire was never provided in advance, to ensure an interviewer was present to explain the questionnaire and address any concerns.

- In single-person households, the core self-completion questionnaire was provided in advance of the interview (in person by the interviewer or by post) to give respondents an opportunity to complete it before the interview.
- In households containing more than one potential respondent, the core self-completion questionnaires were never given in advance. In concurrent interviews, the self-completion questionnaires were completed while the other respondent in the concurrent session was completing the ‘private’ modules, or at the end of the interview, or after the interview. In multi-person households where interviews were conducted separately, the respondents could complete the self-completion questionnaire while the other person was being interviewed, or at the end of the interview, or after the interview.
- Completed questionnaires were returned by the interviewer (if they had been completed before or during the interview) or posted back by the respondent in a Freepost envelope provided by the interviewer.

Overall, the intention at wave 8 was to collect data about the same topics as at the previous waves, but some changes to the questionnaire were made. The new topics introduced at wave 8 are included in Box 5.1, as well as key questions chosen to be omitted for this wave (e.g. due to wave rotation).

The interview ended with a request to confirm or amend consent to link the respondent’s survey answers to administrative data sources: Hospital Episode Statistics, economic data, Primary Care data records and Cancer and Mortality Records. None of these consents was collected from or confirmed with individuals for whom a proxy respondent was needed. Contact details were requested for a stable address and for a nominated individual who might respond if a proxy, institutional or end-of-life interview were needed in the future.

Box 5.1. Content of the ELSA interview at wave 8 (2016–17)

Household demographics: collected or updated demographic information about everyone living in the household, including gender, age and relationships to each other, and collected or updated information about children living outside the household.

Individual demographics: collected or updated details about respondents' legal marital status, parents' age and cause of death, and number of living children. Questions on proximity to where children and grandchildren live added in wave 8.

Health: collected or updated self-reported general health, long-standing illness or disability, eyesight, hearing, specific diagnoses and symptoms, pain, difficulties with daily activities, smoking, mental health, urinary and bowel incontinence, falls and fractures, quality of care and cancer screening. Questions on dental health, hearing and e-cigarette use were removed from wave 8. Questions on quality of care for cardiovascular disease, depression, diabetes, falls and osteoarthritis, and questions on sleep disturbance were reintroduced. Questions on perceived weight and sense of taste and smell have been added.

Social care: topics included the nature of care received, who it was received from, the amount received and payments made for care. New questions on short stays in residential/nursing homes were added at wave 8.

Social participation: covered the use of different types of transport.

Work and pensions: collected or updated current work activities, current and past pensions, reasons for job change, health-related job limitations, working beyond the state pension age and state pension deferral. New questions were added about additional payments into a pension, to reflect recent changes in pension legislation.

Income and assets: assessed the income that respondents received from a variety of sources over the last 12 months: wages, state pensions, private pensions, other annuity income and state benefits; also collected financial and non-financial assets. Routing to questions about lifetime receipt of gifts and inheritances that were included in wave 6 was changed at wave 7 to ensure that the questions were asked of respondents not asked at wave 6.

Housing: collected or updated current housing situation (including size and quality), housing-related expenses, adaptations to accommodation for those with physical impairments, ownership of durable goods and cars, consumption including food in and out of home, fuel, durables and clothing.

Cognitive function: measured different aspects of the respondent's cognitive function, including memory, speed and mental flexibility. Elements included were memory and concentration, word list recall, animal naming, backwards counting from 20, serial 7s, naming objects and people, and word list recall repeat. The fluid intelligence (number series) task was moved from the main interview to the nurse visit in wave 8.

Expectations: measured expectations for the future in a number of dimensions, financial decision-making and relative deprivation.

Effort and reward: assessed the relationship between effort and reward in relation to voluntary and caring activities. New questions on care provided to grandchildren were added in wave 8.

Psychosocial health: measured how the respondent viewed his or her life across a variety of dimensions. For wave 8, questions about experiences of being mentored when younger were added.

Walking speed: for respondents aged 60 and above, a 'timed walk' with the respondent walking a distance of 8 feet (244 cm) at their usual walking pace.

Weight measurement: weight measurement was moved from the nurse visit to the main interview in wave 8.

Final questions: collected any missing demographic information and updated contact details and consents.

Self-completion questionnaires: covered quality of life, social participation, altruism, control at work, life satisfaction, consumption of fruit and vegetables, social networks and alcohol consumption.

5.4 Wave 8 nurse interview

5.4.1 Eligibility criteria for wave 8 nurse interview

After carrying out the interview, for respondents eligible for a follow-up nurse visit, the interviewer asked whether they would be willing to have a nurse visit, and if yes, made an appointment for the nurse or set up contact between the nurse and respondent.

While on previous ELSA waves, all core members who completed a CAPI were eligible for a follow-up nurse visit, at wave 8 a nurse visit was only offered to a subsample of core members who took part in an interview in person at wave 8. The subsample was selected to oversample respondents who had taken part in all previous nurse waves where they had been eligible.

The full eligibility criteria for a wave 8 nurse interview were the following.

- Only core members who completed a main interview in person at wave 8 and were marked as eligible for a nurse visit at wave 8 were eligible (i.e. offered a nurse visit at the end of their interview).
- No ELSA partners were eligible for nurse visits.
- However, a small number of partners and non-eligible core members were given a nurse visit if someone else in their household was completing a nurse interview, if they specifically requested it or if it was believed it would assist with their future participation in the survey.
- Individuals who completed an interview by proxy were not eligible for a nurse visit.
- There were specific eligibility criteria for each measure conducted by the nurse. These are outlined briefly below and in more detail in the ELSA Nurse User Guide (available at the UK Data Service website[27]).

5.4.2 Structure and content of wave 8 nurse interview

The nurse visited the respondent to carry out a series of measurements listed in Box 5.2. These were only obtained if the appropriate consents were given and the respondent was able to respond to relevant safety and eligibility questions.

As described above, a blood sample was collected from respondents who gave consent for this, in order to examine the factors outlined in Box 5.3.

[27] See http://doc.ukdataservice.ac.uk/doc/5050/mrdoc/pdf/5050_waves_2-4-6-8_nurse_data_user_guide_v01.pdf.

Box 5.2. Content of the ELSA nurse interview at wave 8 (2016–17)

The nurse visit included several standard measures including:

Blood pressure

Blood sample: most respondents under the age of 80 were asked to fast before giving the sample. A list of the uses to which the sample was put is listed in Box 5.3.

Grip strength: a measure of upper body strength, during which the respondent was asked to squeeze a grip gauge up to three times with each hand.

Cognitive function: numerical problem-solving task aimed at assessing fluid intelligence

Questions about **prescribed medication** were introduced at wave 6 and again included at wave 8, collecting the details of up to 40 prescribed medications currently being taken.

Box 5.3. Purpose of the blood measurements at wave 8 (2016–17)

Factors increasing risk of heart disease: total cholesterol, LDL cholesterol, triglycerides, C-reactive protein, fibrinogen, white blood cell count (the latter three as markers for inflammation).

Risk of diabetes: fasting glucose, glycated haemoglobin.

Protective factors against heart disease: apolipoprotein E, HDL cholesterol.

Checks on iron levels and anaemia: ferritin and haemoglobin, and mean corpuscular haemoglobin.

Other health: Vitamin D for bone health and IGF-1 for digestion, immune system, etc.

Genetics: the expressions of a number of genes through collection of RNA samples (with a PAXgene blood tube).

5.5 Fieldwork

Each eligible individual was sent an advance letter inviting them to take part in wave 8. Interviewers then contacted the household by phone or in person to arrange an appointment for the face-to-face interview. A number of approaches were used to encourage participation among the sample, many of which were similar to those described in the first ELSA report (Marmot et al., 2003). Interviewer fieldwork for the eighth wave of ELSA began in May 2016 and spanned a year, finishing in June 2017.

5.6 Number and type of completed interviews

In this section, we present summary information about the number of interviews completed in wave 8 (2016–17) for the face-to-face interview.

5.6.1 Overall response

Survey response and quality of fieldwork were carefully monitored throughout the study period. Ultimately, the ELSA wave 8 fieldwork produced 8,445 productive interviews (including both proxy and partial interviews).

Table 5.1 shows the number of interviews conducted at wave 8, broken down by interview type. There were 7,938 full interviews in person and 419 full interviews by proxy. At wave 8, 58 interviews were conducted with individuals who had originally been interviewed in a private household and had since moved into an institution, and were therefore still eligible for follow-up (see Section 5.1).

Table 5.2 shows the number of interviews conducted at wave 8, broken down by cohort.

Table 5.1. Respondents, by type of interview wave 8 (2016–17): all cohorts

	Number of respondents	Percentage
Full interview in person	7,938	94
Full interview by proxy	419	5
Partial interview in person	29	<1
Partial interview by proxy	1	<1
Institutional interview in person	15	<1
Institutional interview by proxy	43	1
Unweighted N	*8,445*	*100*

Note: Respondents in 2016–17. Columns may not add up to 100% because of rounding.

Table 5.2. Respondents, by cohort: all cohorts

	Number of respondents	Percentage
Cohort 1	4,633	55
Cohort 3	1,004	12
Cohort 4	1,654	20
Cohort 6	809	10
Cohort 7	345	4
Unweighted N	*8,445*	*100*

Note: Respondents in 2016–17. Columns may not add up to 100% because of rounding.

5.6.2 Response by cohort

Cohort 1

Table 5.3 shows the number of interviews conducted for Cohort 1, broken down by sample type. A total of 4,633 interviews were achieved with members of Cohort 1 at wave 8, and 4,219 of these were with core members.

Table 5.4 presents the pattern of response over time for the 4,219 Cohort 1 core members who were interviewed at wave 8, and it gives a breakdown of the type of wave 8 interview conducted with them. It shows that 85% of those interviewed at wave 8 had completed an interview at every wave since wave 1 and 95% of Cohort 1 core members interviewed at wave 8 were interviewed in person.

Table 5.3. Respondents, by sample type: Cohort 1

	Number of respondents
Core member[a]	4,219
Core partner[b]	87
Younger partner	220
New partner	107
Unweighted N	*4,633*

Note: Respondents in 2016–17, including proxies.
[a] Born on or before 29 February 1952.
[b] Core partners are individuals sampled as core members in wave 1 but who did not respond in wave 1, and so were only interviewed in wave 8 by virtue of being the partner of a core member.

Table 5.4. Core member respondents, by situation in wave 8 (2016–17): Cohort 1

	Number of respondents	Percentage
Pattern of response		
All seven waves	3,582	85
Missed one or more waves	637	15
Type of interview		
Full interview in person	3,995	95
Full interview by proxy	155	4
Partial interview in person	14	<1
Partial interview by proxy	1	<1
Institutional interview in person	14	<1
Institutional interview by proxy	40	1
Unweighted N	*4,219*	*100*

Note: Core member respondents in 2016–17. Columns may not add up to 100% because of rounding.

Cohort 3

Table 5.5 gives a breakdown of the number of achieved interviews by each sample type for Cohort 3. A total of 1,004 interviews were conducted overall and 723 of these were with core members.

Table 5.6 shows the pattern of response over time for the 723 Cohort 3 core members interviewed at wave 8, and the type of interview conducted at wave 8. It shows that 84% of Cohort 3 core members interviewed at wave 8 also took part in the five preceding waves for which they were eligible (waves 3, 4, 5, 6 and 7) and 97% of Cohort 3 core members interviewed at wave 8 were interviewed in person.

Table 5.5. Respondents, by sample type: Cohort 3

	Number of respondents
Core member[a]	723
Core partner[b]	12
Younger partner	155
Older partner	76
New partner	38
Unweighted N	*1,004*

Note: Respondents in 2016–17, including proxies.
[a] Born between 1 March 1952 and 1 March 1956.
[b] Core partners are individuals sampled as core members in wave 3 but who did not respond in wave 3, and so were only interviewed in wave 8 by virtue of being the partner of a core member.

Table 5.6. Core member respondents, by situation in wave 8 (2016–17): Cohort 3

	Number of respondents	Percentage
Pattern of response		
All five waves (waves 3, 4, 5, 6, 7)	610	84
Missed one or more waves	113	16
Type of interview		
Full interview in person	699	97
Full interview by proxy	20	3
Partial interview in person	3	<1
Partial interview by proxy	0	0
Institutional interview in person	0	0
Institutional interview by proxy	1	<1
Unweighted N	*723*	*100*

Note: Core member respondents in 2016–17. Columns may not add up to 100% because of rounding.

Cohort 4

Table 5.7 presents the breakdown of achieved interviews by sample type for Cohort 4. A total of 1,654 interviews were conducted, and 1,470 of these were with core members.

Table 5.8 shows the type of wave 8 interview conducted with the 1,470 core members from Cohort 4. It shows that 91% of Cohort 4 core members interviewed at wave 8 also took part in the four preceding waves for which they were eligible (waves 4, 5, 6 and 7) and 96% of Cohort 4 core members interviewed at wave 8 were interviewed in person.

Table 5.7. Respondents, by sample type: Cohort 4

	Number of respondents
Core member[a]	1,470
Core partner[b]	16
Younger partner	66
Older partner	70
New partner	32
Unweighted N	*1,654*

Note: Respondents in 2016–17, including proxies.
[a] Born between 1 March 1933 and 28 February 1958.
[b] Core partners are individuals sampled as core members in wave 4 but who did not respond in wave 4, and so were only interviewed in wave 8 by virtue of being the partner of a core member.

Table 5.8. Core member respondents, by situation in wave 8 (2016–17): Cohort 4

	Number of respondents	Percentage
Pattern of response		
All four waves (wave 4, 5, 6, 7)	1,340	91
Missed one or more waves	130	9
Type of interview		
Full interview in person	1,413	96
Full interview by proxy	48	3
Partial interview in person	6	<1
Partial interview by proxy	0	0
Institutional interview in person	1	<1
Institutional interview by proxy	2	<1
Unweighted N	*1,470*	*100*

Note: Core member respondents in 2016–17. Columns may not add up to 100% because of rounding.

Cohort 6

Table 5.9 presents the breakdown of achieved interviews by sample type for Cohort 6. A total of 809 interviews were conducted, and 582 of these were with core members.

Table 5.10 shows the type of wave 8 interview conducted with the 582 core members from Cohort 6. It shows that 96% of Cohort 6 core members interviewed at wave 8 also took part in the two preceding waves for which they were eligible (waves 6 and 7) and 97% of Cohort 6 core members interviewed at wave 8 were interviewed in person.

Table 5.9. Respondents, by sample type: Cohort 6

	Number of respondents
Core member[a]	582
Core partner[b]	20
Younger partner	98
Older partner	93
New partner	16
Unweighted N	*809*

Note: Respondents in 2016–7, including proxies.
[a] Born between 1 March 1956 and 28 February 1962.
[b] Core partners are individuals sampled as core members in wave 6 but who did not respond in wave 6, and so were only interviewed in wave 8 by virtue of being the partner of a core member.

Table 5.10. Core member respondents, by situation in wave 8 (2016–17): Cohort 6

	Number of respondents	Percentage
Pattern of response		
All waves (6, 7)	557	96
Missed one or more waves	25	4
Type of interview		
Full interview in person	565	97
Full interview by proxy	15	3
Partial interview in person	2	<1
Partial interview by proxy	0	0
Unweighted N	*582*	*100*

Note: Core member respondents in 2016–17. Columns may not add up to 100% because of rounding.

Cohort 7

Table 5.11 presents the breakdown of achieved interviews by sample type for Cohort 7. A total of 345 interviews were conducted, and 229 of these were with core members.

Table 5.12 shows the type of wave 8 interview conducted with the 229 core members from Cohort 7. As wave 7 was the first wave of fieldwork for this cohort, no pattern of response is shown: by definition, all (100%) of the wave 7 core members interviewed at wave 8 had also been interviewed at wave 7 in order to became Cohort 7 core members. Of the Cohort 7 core members interviewed at wave 8, 98% were interviewed in person.

Table 5.11. Respondents, by sample type: Cohort 7

	Number of respondents
Core member[a]	229
Core partner[b]	2
Younger partner	58
Older partner	52
New partner	4
Unweighted N	*345*

Note: Respondents in 2016–17, including proxies.
[a] Born between 1 March 1962 and 28 February 1964.
[b] Core partners are individuals sampled as core members in wave 7 but who did not respond in wave 7, and so were only interviewed in wave 8 by virtue of being the partner of a core member.

Table 5.12. Core member respondents, by situation in wave 8 (2016–17): Cohort 7

	Number of respondents	Percentage
Type of interview		
Full interview in person	224	98
Full interview by proxy	5	2
Partial interview in person	0	0
Partial interview by proxy	0	0
Unweighted N	*229*	*100*

Note: Core member respondents in 2016–17. Columns may not add up to 100% because of rounding.

5.7 Response rates

There is no universally accepted definition of ‘response rate’. An important distinction exists between ‘field’ and ‘study’ response rates. Fieldwork response rates are based on the subset of individuals actually issued for interview at any particular wave. Study response rates for longitudinal surveys are broader, in that they relate back to the originally selected sample, irrespective of whether eligible cases were issued to field at any particular wave.

Both field and study rates exclude cases not belonging to the target population through ‘terminating events’, which make a person ineligible for further participation. For ELSA sample members, these events include deaths and moves out of Great Britain. In what follows, we first cover fieldwork response rates and then we present key study response rates. Respondents are defined as those who gave a full or partial interview, including institutional interviews, either in person or in proxy.

5.7.1 Fieldwork response rates

Three fieldwork response rate measures, commonly used to evaluate the quality of fieldwork, are presented in this section for ELSA wave 8: household contact rate, individual cooperation rate and individual response rate (see Box 5.4). In addition, for Cohorts 1, 3, 4 and 6, where the issued sample at wave 8 consisted of a mixture of core members who were and who were not interviewed at the preceding round (wave 7), two additional measures are also presented, which provide the response rate separately for these two groups: individual re-interview rate (i.e. the response rate among those interviewed at wave 7) and individual conversion rate (i.e. the response rate among those not interviewed at wave 7).

Box 5.4. Definition of fieldwork response rate measures

Contact rate: the proportion of attempted survey units where a contact was made. In this section, the household contact rate gives the total number of wave 8 households where contact was made by an interviewer with at least one member of the sample, divided by the total number of eligible households.

Cooperation rate: the proportion of eligible respondents who, having been contacted, agree to participate in a research study (as opposed to refusing or otherwise indicating inability to participate). In this section, the individual cooperation rate gives the total number of individual wave 8 respondents, divided by the total number of (still eligible) individuals contacted by the interviewer. Non-contacts and those untraced are therefore also treated as ineligible in this response rate.

Response rate: the proportion of eligible survey units who participate in a research study. For ELSA, ‘eligible’ means not having been found to be ineligible through death or moving out of Great Britain. Those with outcomes indicating unknown/unconfirmed eligibility (e.g. non-contacts, untraced movers) are assumed to be eligible for the response rate calculation. In this section, the individual response rate gives the total number of individual wave 8 respondents, divided by the total number of individuals who have not been confirmed as ineligible for a wave 8 interview.

Re-interview rate: in a longitudinal survey, this gives an indication of the success in ‘keeping’ previously productive respondents in the study at the latest wave. In this section, the re-interview rate gives the proportion of issued ELSA cohort members interviewed at wave 7 who were also interviewed at wave 8.

Conversion rate: this gives an indication of how many respondents the interviewers succeeded in ‘bringing back’ to the study after a wave (or more) or non-response. In this section, the conversion rate gives the proportion of issued ELSA cohort members who were not interviewed at wave 7 but were interviewed at wave 8.

All individual-level field response analysis is conducted among core members issued to interviewers at wave 8, excluding any core members in issued households who had previously asked not to be contacted again for an ELSA interview.

Household contact rates

Table 5.13 summarises the household contact rates for the wave 8 issued sample, overall and broken down by cohort.

Overall, looking at all cohorts together, 95.9% of the wave 8 issued and eligible households were contacted. Comparable levels of contact rates (around 95–97%) were found among all other cohorts, with the exception of the somewhat lower contact rate of 91.1% among Cohort 6 households.

Table 5.13. Household contact rate, by cohort

	Number of households	Percentage
Cohort 1	3,429	96.7
Cohort 3	756	95.2
Cohort 4	1,242	96.7
Cohort 6	646	91.1
Cohort 7	268	95.7
All cohorts	6,341	95.9
Unweighted N	*6,613*	*100*

Note: Core members contacted at wave 8.

Individual cooperation rates

Table 5.14 shows the individual cooperation rates at wave 8, overall and by cohort.

Across all cohorts, the overall individual cooperation rate upon contact was 84.9%. The highest cooperation rates of around 85% were found among the three oldest cohorts, Cohorts 1, 3 and 4, with the cooperation rate among Cohort 6 and 7 core members somewhat lower, at around 80%.

Table 5.14. Individual cooperation rate, by cohort

	Number of respondents	Percentage
Cohort 1	4,219	85.8
Cohort 3	723	85.1
Cohort 4	1,470	85.6
Cohort 6	582	79.0
Cohort 7	229	80.9
All cohorts	6,962	84.9
Unweighted N	*8,506*	*100*

Note: Core members contacted at wave 8.

Individual response rates

Table 5.15 shows the response rates overall and by cohort. Across all cohorts, the individual response rate upon eligibility at wave 8 was 82.4%. The highest rates were again found among the three oldest cohorts, with response rates around 83% found among Cohorts 1, 3 and 4. The Cohort 6 response rate was the lowest at 73.8% with Cohort 7 response at 78.2%.

Table 5.15. Individual response rate, by cohort

	Number of respondents	Percentage
Cohort 1	4,219	83.6
Cohort 3	723	82.4
Cohort 4	1,470	83.4
Cohort 6	582	73.8
Cohort 7	229	78.2
All cohorts	7,223	82.4
Unweighted N	*8,770*	*100*

Note: Core members eligible at wave 8.

Re-interview and conversion rates

Response rates can also be looked at separately for those who were and those who were not productive at the preceding wave (wave 7), for a good indication of the ability of the interviewers to retain people in the study and to convert non-responders back to respondents.

As shown in Table 5.16, overall, almost nine in ten issued sample members who took part in wave 7 responded again at wave 8: the overall individual re-interview rate at wave 8 across all cohorts was 89.4% (Table 5.16). As we might expect, the highest continuing response levels were found among the longest-standing participants in Cohorts 1, 3 and 4, with re-interview rates around 90%. Core members in Cohorts 6 and 7, invited to participate for the third and second time, respectively, had somewhat lower levels of continuing 'survey loyalty' with re-interview rates of 86.2% and 78.2%, respectively.

Table 5.16. Re-interview rate, by cohort

	Number of respondents	Percentage
Cohort 1	4,078	90.0
Cohort 3	685	89.7
Cohort 4	1,413	91.0
Cohort 6	557	86.2
Cohort 7[28]	229	78.2
All cohorts	6,962	89.4
Unweighted N	*7,788*	*100*

Note: Core members productive at wave 7 and eligible at wave 8.

As for core members issued at wave 8 who were not interviewed at wave 7, around one in four were converted back to the study at wave 8 (see Table 5.17). The overall conversion rate across Cohorts 1, 3, 4 and 6 was 26.6%,

[28] Note that the Cohort 7 re-interview rate is the same as the Cohort 7 response rate in Table 5.15, as all issued Cohort 7 core members took part in wave 7 when they joined ELSA.

with relatively similar levels across Cohorts 1, 3 and 4 and a lower rate of conversion among Cohort 6 (Table 5.17).

Table 5.17. Conversion rate, by cohort

	Number of respondents	Percentage
Cohort 1	141	27.5
Cohort 3	38	33.0
Cohort 4	57	27.0
Cohort 6	25	17.5
Cohort 7[29]	n/a	n/a
All cohorts	261	26.6
Unweighted N	*982*	*100*

Note: Core members unproductive at wave 7 and eligible at wave 8.

Reasons for non-response by cohort

Tables 5.18–5.22 present the reasons for non-response at wave 8 for issued core members in Cohorts 1, 3, 4, 6 and 7 in turn.[30] A judgement of the impact of any differential non-response is reserved for Section 5.9 where bias is examined.

Across all cohorts, and as in previous waves, the largest component (ranging from 54% in Cohort 1 to 77% in Cohort 7) of field non-response within each of the cohorts was a result of refusals.

Other reasons for non-response, which include reasons such as ill health/away in hospital, are the most common among Cohort 1, accounting for around a third of non-response. This is not unexpected given that Cohort 1 includes the oldest sample members of all the cohorts, among whom an increasing number of age-related circumstantial reasons for not participating can be expected at each successive wave.

Table 5.18. Reasons for non-response: core members in Cohort 1

	Frequency	Percentage
Non-contact	54	7
Refusal	445	54
Moved – unable to trace	71	9
Other	257	31
Unweighted N	*827*	*100*

Note: Eligible core members but non-respondents in 2016–17. Columns may not add up to 100% because of rounding.

[29] The conversion rate does not apply to Cohort 6 as there were no issued core members in Cohort 7 at wave 8 who were unproductive at wave 7.

[30] All core members had an interview at the first wave, but their pattern of response at subsequent waves differs amongst this group.

Table 5.19. Reasons for non-response: core members in Cohort 3

	Frequency	Percentage
Non-contact	10	6
Refusal	104	67
Moved – unable to trace	14	12
Other	24	15
Unweighted N	*156*	100

Note: Eligible core members but non-respondents in 2016–17. Columns may not add up to 100% because of rounding.

Table 5.20. Reasons for non-response: core members in Cohort 4

	Frequency	Percentage
Non-contact	18	6
Refusal	196	67
Moved – unable to trace	26	9
Other	53	18
Unweighted N	*293*	*100*

Note: Eligible core members but non-respondents in 2016–17. Columns may not add up to 100% because of rounding.

Table 5.21. Reasons for non-response: core members in Cohort 6

	Frequency	Percentage
Non-contact	23	11
Refusal	127	61
Moved – unable to trace	27	13
Other	30	14
Unweighted N	*207*	*100*

Note: Eligible core members but non-respondents in 2016–17. Columns may not add up to 100% because of rounding.

Table 5.22. Reasons for non-response: core members in Cohort 7

	Frequency	Percentage
Non-contact	4	6
Refusal	49	77
Moved – unable to trace	6	9
Other	5	8
Unweighted N	*64*	*100*

Note: Eligible core members but non-respondents in 2016–17. Columns may not add up to 100% because of rounding.

5.7.2 Study response rates

As with the field response rates, study response rates exclude cases not belonging to the target population through 'terminating events' such as deaths and moves out of Great Britain. In contrast to the field response rates, the base for the study response rates is all cohort members not known to be ineligible (dead or moved out of Great Britain),[31] while field response rates report the rates of response among eligible respondents issued to the interviewer at the given wave.

Two key types of study response rates are presented here for each cohort (see Box 5.5): the cross-sectional wave 8 study response rates, illustrating the wave 8 respondents as a proportion of eligible people in each cohort, and the longitudinal wave 8 study response rates, illustrating the proportion of eligible respondents in each cohort who have taken part in every wave of ELSA since joining the study.

Box 5.5. Definition of study response rate measures

(Cross-sectional) study response rate: the 'study response rate' at a given wave of a longitudinal study is the proportion of the remaining eligible longitudinal cohort interviewed at that wave. The inclusion as a 'respondent' in this measure is not conditional upon response in any other earlier wave (i.e. the total number of respondents in wave 8 includes those who returned to the ELSA study at wave 8 after missing any of the prior waves). In this section, the (cross-sectional) study response rate gives the total number of wave 8 respondents, divided by the total number of people still eligible (i.e. not confirmed as dead or moved outside of Great Britain) in a given cohort.

Longitudinal study response rate: the proportion of a remaining eligible longitudinal cohort who have been interviewed at every wave of a study. In this section, the longitudinal study response rate gives the total number of ELSA cohort members interviewed at each wave since they joined ELSA (including wave 8), divided by the total number of people still eligible (i.e. not confirmed as dead or moved outside of Great Britain) in a given cohort.

(Cross-sectional) study response rates

Cohort 1

A total of 11,391 original core members were interviewed at wave 1. Table 5.23 shows the status of these core members at wave 8.

The wave 8 cross-sectional study response rate reflects the proportion of still eligible core members from Cohort 1 with a wave 8 interview. A study response rate of 55.2% was achieved at wave 8.

[31] Particularly for the oldest cohorts, many respondents in the 'non-respond' category have not been issued to interviewers in the most recent wave(s) because they have indicated previously that they would not wish to take part again. It is likely that some of these cohort members have, in fact, become ineligible since then, either through death or moving out of Great Britain, without us having been notified of this change in circumstances.

Table 5.23. Status of original Cohort 1 core members at wave 8

	Frequency	Percentage
Died	3,581	31
Moved out of Great Britain	173	2
Respond at wave 8	4,219	37
Non-respond at wave 8	3,418	30
Unweighted N	*11,391*	*100*
Total C1CMs eligible at wave 8	*7,637*	
Total C1CMs ineligible at wave 8	*3,754*	
Study response rate	***4,219/7,637***	***55.2***

Cohort 3

Wave 3 represents the baseline wave of ELSA for core members belonging to Cohort 3. A total of 1,275 Cohort 3 core members took part in wave 3. Table 5.24 shows the status of these core members at wave 8.

The wave 8 (cross-sectional) study response rate reflects the proportion of still eligible core members from Cohort 3 with a wave 8 interview. A study response rate of 60.0% was achieved for Cohort 3 core members at wave 8.

Table 5.24. Status of original Cohort 3 core members at wave 8

	Frequency	Percentage
Died	54	4
Moved out of Great Britain	18	1
Respond at wave 8	723	57
Non-respond at wave 8	479	38
Unweighted N	*1,275*	*100*
Total C3CMs eligible at wave 8	*1,203*	
Total C3CMs ineligible at wave 8	*73*	
Study response rate	***723/1,203***	***60.0***

Cohort 4

Wave 4 represents the baseline wave for Cohort 4 core members. A total of 2,291 Cohort 4 core members took part in wave 4. Table 5.25 shows the status of these core members at wave 8.

The wave 8 (cross-sectional) study response rate reflects the proportion of still eligible core members from Cohort 4 with a wave 8 interview. A study response rate of 70.3% was achieved for Cohort 4 core members at wave 8.

Table 5.25. Status of original Cohort 4 core members at wave 8

	Frequency	Percentage
Died	181	8
Moved out of Great Britain	20	1
Respond at wave 8	1,470	64
Non-respond at wave 8	620	27
Unweighted N	*2,291*	*100*
Total C4CMs eligible at wave 8	*2,090*	
Total C4CMs ineligible at wave 8	*201*	
Study response rate	***1,470/2,090***	***70.3***

Cohort 6

Wave 6 represents the baseline wave for Cohort 6 core members. A total of 826 Cohort 6 core members took part in wave 6. Table 5.26 shows the status of these core members at wave 8.

The wave 8 (cross-sectional) study response rate reflects the proportion of core members from Cohort 6 who were still eligible for a wave 8 interview. A study response rate of 71.7% was achieved for Cohort 6 core members at wave 8.

Table 5.26. Status of original Cohort 6 core members at wave 8

	Frequency	Percentage
Died	10	1
Moved out of Great Britain	4	<1
Respond at wave 8	582	70
Non-respond at wave 8	230	28
Unweighted N	*826*	*100*
Total C6CMs eligible at wave 8	*812*	
Total C6CMs ineligible at wave 8	*14*	
Study response rate	***582/812***	***71.7***

Cohort 7

Wave 7 represents the baseline wave for Cohort 7 core members. A total of 301 Cohort 7 core members took part in wave 7. Table 5.27 shows the status of these core members at wave 8.

The wave 8 (cross-sectional) study response rate reflects the proportion of still eligible core members from Cohort 7 with a wave 8 interview. A study response rate of 76.6% was achieved for Cohort 7 core members at wave 8.

Table 5.27. Status of original Cohort 7 core members at wave 8

	Frequency	Percentage
Died	1	<1
Moved out of Great Britain	1	<1
Respond at wave 8	229	76
Non-respond at wave 8	70	23
Unweighted N	*301*	*100*
Total C7CMs eligible at wave 8	*299*	
Total C7CMs ineligible at wave 8	*2*	
Study response rate	***229/299***	***76.6***

Longitudinal study response rates

The longitudinal response rates show the core members that have been interviewed at every wave of the study (as presented in Tables 5.4, 5.6, 5.8 and 5.10) as a proportion of those that are still eligible (as presented in Tables 5.23–5.27). This is the ‘constant sample’ of respondents available for longitudinal analysis. The longitudinal study response rate for core members at wave 8 was 45.5% for Cohort 1, 50.7% for Cohort 3, 64.1% for Cohort 4 and 68.6% for Cohort 6 (see Table 5.28).

Table 5.28. Longitudinal wave 8 study response rate, by cohort[32]

	Interviewed all waves/eligible	Percentage of eligible
Cohort 1	3,582/7,866	45.5
Cohort 3	610/1,203	50.7
Cohort 4	1,340/2,090	64.1
Cohort 6	557/812	68.6
Unweighted N	*11,971*	*100*

Note: Core members eligible at wave 8.

[32] The longitudinal wave 8 study response rate for Cohort 7 is not provided separately as this is the same as the cross-sectional study response rate for this cohort: all Cohort 7 core member respondents at wave 8 (cross-sectional response) had also taken part in all the waves so far (longitudinal response), i.e. wave 7 when they joined ELSA as core members and wave 8.

5.8 Profile of main interview respondents at wave 8

This section presents profiles of wave 8 respondents in terms of age and gender broken down by cohort. The tables exclude core members living in an institution at wave 8.

5.8.1 Cohort 1

The profile of core member respondents belonging to Cohort 1 (born on or before 29 February 1952) is presented in Table 5.29; this includes respondents who took part in all eight waves plus some who returned to wave 8 after missing waves 2, 3, 4, 5 6 or 7.[33] The distribution shows that the sample contains more women than men.

Table 5.29. Achieved sample of core members: Cohort 1, by age in 2016–17 and by gender

Age in wave 8	Men	Women	Total	Men	Women	Total
				%	%	%
60–64	21	37	58	1	2	1
65–69	547	701	1,248	30	30	30
70–74	462	534	996	25	23	24
75–79	344	414	758	19	18	18
80–84	261	376	637	14	16	15
85+	185	283	468	10	12	11
Unweighted N	*1,820*	*2,345*	*4,165*	*44*	*56*	*100*

Note: Respondents in 2016–17, including proxies but excluding those in institutions. Columns may not add up to 100% because of rounding.

Table 5.30 is based on Cohort 1 core members who took part in all waves (waves 1–7) and shows their main interview response at wave 8. Amongst those who were still eligible at wave 8 (i.e. had not died or moved out of Great Britain), the propensity to participate at wave 8 decreased with age for both men and women.

[33] Interviewers are not asked to follow up sample members who have repeatedly refused, or if comments recorded at their last visit suggest it would be unwise to return.

Table 5.30. Wave 8 (2016–17) main interview response for core members: Cohort 1, who took part in waves 1–7, by age in 2002–03 and by gender

	50–59	60–74	75+	Total
	%	%	%	%
Men				
Respondents	94	92	82	92
Non-respondents	6	8	18	8
Women				
Respondents	93	90	82	91
Non-respondents	7	10	18	9
Total				
Respondents	94	91	82	92
Non-respondents	6	9	18	8
Unweighted N	*1,951*	*1,753*	*202*	*3,906*
Men	*876*	*738*	*73*	*1,687*
Women	*1,075*	*1,015*	*129*	*2,219*

Note: Eligible core members in 2014–15 who took part in waves 1–7. Columns may not add up to 100% because of rounding.

5.8.2 Cohort 3

The profile of the core member respondents belonging to Cohort 3 is presented in Table 5.31. As with Cohort 1, the achieved sample of Cohort 3 core members at wave 8 contains more women than men. The age distribution of the Cohort 3 core member sample is not evenly distributed across the ages represented, with fewer sample members being in the youngest and oldest age year.

Table 5.31. Achieved sample of core members: Cohort 3, by age in 2016–17 and by gender

Age in wave 8	Men	Women	Total	Men	Women	Total
				%	%	%
60	29	38	67	9	10	9
61	102	129	231	31	33	32
62	101	111	212	31	28	29
63	76	91	167	23	23	23
64	20	24	44	6	6	6
65	0	1	1	0	<1	<1
Unweighted N	*328*	*394*	*722*	*45*	*55*	*100*

Note: Respondents in 2016–17, including proxies but excluding those in institutions.

5.8.3 Cohort 4

The profile of the core member respondents belonging to Cohort 4 is presented in Table 5.32. As with other cohorts, the achieved sample at wave 8 includes more women than men.

Table 5.32. Achieved sample of core members: Cohort 4, by age in 2016–17 and by gender

Age in wave 8	Men	Women	Total	Men	Women	Total
				%	%	%
55–59	26	32	58	4	4	4
60–64	195	257	452	29	32	31
65–69	113	185	298	17	23	20
70–74	162	145	307	24	18	21
75–79	114	120	234	17	15	16
80–84	57	61	118	9	8	8
Unweighted N	*667*	*800*	*1,467*	*45*	*55*	*100*

Note: Respondents in 2016–17, including proxies but excluding those in institutions. Columns may not add up to 100% because of rounding.

5.8.4 Cohort 6

The profile of the core member respondents belonging to Cohort 6 is presented in Table 5.33. As with other cohorts, the achieved sample at wave 8 includes more women than men.

Table 5.33. Achieved sample of core members: Cohort 6, by age in 2016–17 and by gender

Age in wave 8	Men	Women	Total	Men	Women	Total
				%	%	%
54	14	11	25	6	3	4
55	36	65	101	15	20	17
56	48	58	106	19	17	18
57	48	50	98	19	15	17
58	41	59	100	17	18	17
59	32	51	83	13	15	14
60	30	39	69	12	12	12
Unweighted N	*249*	*333*	*582*	*43*	*57*	*100*

Note: Respondents in 2016–17, including proxies. Columns may not add up to 100% because of rounding.

5.8.5 Cohort 7

The profile of the core member respondents belonging to Cohort 7 is presented in Table 5.34. Again, the achieved sample at wave 8 includes a greater number of women than men.

Table 5.34. Achieved sample of core members: Cohort 7, by age in 2016–17 and by gender

Age in wave 8	Men	Women	Total	Men	Women	Total
				%	%	%
52	17	19	36	17	15	16
53	51	62	113	50	49	49
53	34	45	79	33	35	35
54	0	1	1	<1	1	<1
Unweighted N	*102*	*127*	*229*	*45*	*55*	*100*

Note: Respondents in 2016–17, including proxies. Columns may not add up to 100% because of rounding.

5.8.6 Profile of proxy respondents

Proxy interviews were carried out if an ELSA panel member could not be interviewed in person because of a physical or cognitive impairment, if they were away in hospital or temporary care, or if they had refused a personal interview but were happy for a proxy to answer for them. Not including institutional interviews, a total of 420 proxy interviews were carried out at wave 8 with core members across all cohorts. Of these, 156 were with Cohort 1 members. Table 5.35 shows the proxy sample in 2016–17 for Cohort 1 core members, by age and gender. There were more proxy interviews for men in the sample than for women (54% compared with 46%).

Table 5.35. Proxy interview sample: Cohort 1, by age in 2016–17 and by gender

Age in wave 8	Men	Women	Total	Men	Women	Total
				%	%	%
60–64	21	17	38	25	24	24
65–69	15	13	28	18	18	18
70–74	18	9	27	21	13	17
75–79	18	14	32	21	19	21
80–84	12	19	31	14	26	20
85+	21	17	38	25	24	24
Unweighted N	*84*	*72*	*156*	*54*	*46*	*100*

Note: Sample members requiring a proxy in 2016–17, excluding those in institutions.

5.8.7 Profile of nurse interview respondents

In total, 3,525 nurse visits were completed at wave 8. ELSA core members were eligible for the nurse visit if they had completed an ELSA wave 8 main interview in person (and not by proxy) and had been marked as being part of the subsample eligible for a wave 8 nurse visit. A small number of nurse visits were completed by non-eligible core members at the nurses' discretion, in households where another core member was being visited by a nurse. Similarly, although not strictly eligible, a small number of partners were allowed a nurse visit in cases where it was believed that it would facilitate their future participation in the study.

In total, at wave 8, 3,479 nurse visits were carried out with core members, and 46 were carried out with partners. The overall response rate to the nurse visit among core members marked eligible for a nurse visit and who completed a wave 8 CAPI was 93%.

The age–gender profile of this group of nurse-visit respondents (eligible and also completed a CAPI) is shown in Table 5.36, and achieved nurse visits by age are shown in Table 5.37.

Table 5.36. Achieved nurse visits with core members from all cohorts, in 2016–17, by age and gender

Age in wave 8	Men	Women	Total	Men	Women	Total
				%	%	%
50–54	12	9	21	1	>1	>1
55–59	179	250	429	12	13	12
60–64	258	314	572	17	16	17
65–69	299	408	707	19	21	20
70–74	278	313	591	18	16	17
75–79	223	263	486	15	14	14
80–84	159	227	386	10	12	11
85+	124	144	268	8	8	8
Unweighted N	*1,532*	*1,928*	*3,460*[34]	*44*	*56*	*100*

A number of reasons were given for not taking part in the nurse visit. The main reason was refusal (see Table 5.38). Of those who were eligible but did not take part, 15% were cases where the nurse was unable to contact the household. This may reflect some individual circumstances, but in other cases this could be interpreted as an implicit refusal, despite the fact that consent had been given to be visited by the nurse at the end of the main interview. Other reasons for non-response include being too ill or away at the time period available to complete the nurse visit.

[34] This table excludes the small number of core members (19) who completed a wave 8 nurse visit despite not completing a personal wave 8 interview.

Table 5.37. Achieved nurse visits with core members from all cohorts as a proportion of wave 8 interviews (2014–17) by age

Age in wave 8	Productive wave 8 interview (excluding proxies)	Productive wave 8 nurse visit	Percentage of wave 8 interviews resulting in a nurse visit
50–54	21	21	100
55–59	468	429	92
60–64	613	572	93
65–69	745	707	95
70–74	638	591	93
75–79	512	486	95
80–84	418	386	92
85+	300	268	89
Unweighted N	*3,715*	*3,460*	93

Table 5.38. Reasons for non-response to nurse visit for core members from all cohorts

Reason for non-response	Frequency	Percentage
Non-contact	39	15.3
Refusal	185	72.5
Other	31	12.2
Unweighted N	*255*	*100*

Note: Core members eligible for a nurse visit who responded to the wave 8 interview in person, but had no nurse visit.

5.9 Implications for analyses: weighting

In this section, we describe the weighting strategies used to create the wave 8 weights: the adjustments made for non-response and the process of combining Cohorts 1, 3, 4, 6 and 7. The longitudinal weights are covered first, followed by the cross-sectional weights, the nurse and blood weights and, finally, the two self-completion weights.

5.9.1 Longitudinal weights (wave 1 base)

A longitudinal weight was calculated for the 3,470 Cohort 1 core members who have responded to all eight waves of ELSA and have remained living in private households. The purpose of the weight is to make those receiving it as representative as possible of all people who:

- were aged 50+ and living in England in 2002 (when wave 1 was conducted);
- have survived and remain living in private households.[35]

These respondents are now aged 64 and above.

For the 3,795 Cohort 1 core members who were eligible for the main interview in wave 8 and responded at all previous waves, response to wave 8 was modelled using logistic regression analysis on a range of household- and individual-level information collected at wave 7 (supplemented by information taken from waves 1–6). The analysis was conducted using the wave 7 longitudinal weight (to ensure that the wave 8 weight did not replicate the adjustments made by the wave 7 weight).

The results showed significant differences between respondents and non-respondents on a number of characteristics:

- age (at wave 1) by gender;
- region;
- index of multiple deprivation (IMD)[36] quintile;
- urban/rural classification;
- highest educational qualification;
- whether moved between waves 6 and 7.

A non-response weight for wave 8 was created as the inverse of the estimated probability of response (from the logistic regression model). This was then multiplied by the wave 7 longitudinal weight (and scaled to an average of 1) to produce the wave 8 longitudinal weight. The sequential nature of the weighting[37] means that we have adjusted for non-response to the HSE and each of the eight waves of ELSA.

5.9.2 Longitudinal weights (wave 4 base)

A new longitudinal weight was created at wave 8[38] for all core members from Cohorts 1, 3 and 4 who were eligible for the main interview in wave 8, *and* who responded to all of waves 4–8. The purpose of the weight is to make those receiving it as representative as possible of all people who:

- were aged 50+ and living in England in 2008 (when wave 4 was conducted);

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[35] The small number of respondents who subsequently moved to Scotland or Wales are still given a longitudinal weight.

[36] The IMDs provide a set of relative measures of deprivation for small areas (Lower-layer Super Output Areas) across England, based on seven domains of deprivation (income; employment; education, skills and training; health and disability; crime; barriers to housing and services; and living environment). The domains are combined to produce the overall IMD.

[37] Longitudinal weights are based on a sequence of attrition models, one for each wave. Each time, the resulting non-response weight is multiplied by the weight created at the previous wave. In this case, the weight derived in wave 8 builds on the wave 7 weight, which, in turn, built on the weight created in wave 6, and so on back to wave 1 and HSE.

[38] A wave 4 base longitudinal weight was first created at wave 7 but this was done after the report was written.

- have survived and remain living in private households[39].

These respondents are now aged 58 and above.

There were 5,623 such core members with 3,671 coming from Cohort 1, 613 from Cohort 3 and 1,339 from Cohort 4.[40] This weight will provide a larger base for longitudinal analyses, which utilise data from any subset of waves 4–8 (and do not include waves 1–3).

For the 6,178 core members from Cohorts 1, 3 and 4 who were eligible for the main interview in wave 8 *and* responded to all of waves 4–7, response to wave 8 was modelled using logistic regression analysis on a range of household- and individual-level information collected at wave 7 (supplemented by information taken from waves 1–6). Separate models for were created for each cohort (1, 3 and 4); however, for consistency (and parsimony), characteristics that were predictive of response for any one of the three cohorts were included in all three models.

The analysis was conducted using the wave 7 longitudinal weight (wave 4 base) constructed after wave 7;[41] this weight was based on a sequence of non-response models that adjust for non-response since wave 4.

The results showed significant differences between respondents and non-respondents on a number of characteristics (after controlling for age/gender and region, which was also included in the final model):

- IMD quintile;
- urban/rural;
- highest educational qualification;
- white/non-white ethnicity;
- housing tenure;
- self-reported health status;
- number of people in household;
- whether they have a long-term limiting illness;
- National Statistics socio-economic classification (NS-SEC);
- whether moved since wave 7.

By taking the inverse of the estimated probability of response (from the logistic regression model), a non-response weight for wave 8 was created. This was then multiplied by the wave 7 longitudinal weight (wave 4 base) and scaled to have an average of 1 to produce the final wave 8 longitudinal weight (wave 4 base). The sequential nature of the weighting[42] means that we have adjusted for non-response to HSE and each of the seven waves of ELSA.

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[39] The small number of respondents who subsequently moved to Scotland or Wales are still given a (wave 4 base) longitudinal weight.

[40] Respondents living in Scotland or Wales at wave 4 do not receive a weight.

[41] This was done after the wave 7 report was written.

[42] Longitudinal weights are based on a sequence of attrition models, one for each wave. Each time, the resulting non-response weight is multiplied by the weight created at the previous wave. In this case, the weight derived in wave 8 builds on the wave 7 weight, which, in turn, built on the weight created for wave 6, and so on back to wave 4.

5.9.3 Cross-sectional weights

A cross-sectional weight was created for analysis of the full set of core members responding at wave 8. This allows for the inclusion of core members from Cohorts 1, 3, 4, 6 and 7, including 'wave non-responders' (those core members from Cohorts 1, 3, 4 and 6 who returned to the study at wave 8 after missing one or more previous waves). The aim of the cross-sectional weight is to make the sample representative of those living in private households in England in 2016. As described below, we weight to population estimates for England, so by definition we cannot (and do not) include anyone now living in Scotland or Wales in the cross-sectional weighting.

Core members from Cohorts 1, 3, 4, 6 and 7 who responded at wave 8 can be described as the 'combined sample'. For weighting purposes, this combined sample was split into two main groups by age (at interview): those aged 64+ and those aged 52–63. The cross-sectional weight was calculated using the following steps.

1) A non-response weight was derived for Cohort 3 core members who had responded to (all of) waves 3–7 to adjust for non-response at wave 8.
2) A non-response weight was derived for Cohort 4 core members who had responded to (all of) waves 4–7 to adjust for non-response at wave 8.
3) A non-response weight was derived for Cohort 6 core members who had responded to (all of) waves 6–7 to adjust for non-response at wave 8.
4) A non-response weight was derived for Cohort 7 core members to adjust for non-response at wave 8.
5) Population estimates (of highest educational qualification, tenure, ethnicity and marital status) for core members aged 64+ (at wave 8) were derived from the longitudinal group (those Cohort 1 core members responding to all eight waves of ELSA) combined with Cohort 4 core members aged 64+.
6) The non-response weights for *all* core members aged 64+ at wave 8 (i.e. the two groups mentioned above in point 5 plus wave non-responders) were then calibrated to these population estimates plus estimates of age/gender and region from 2016 household population estimates.[43]
7) The non-response weights for all core members aged 52–63 (at wave 8) were calibrated to 2016 population estimates of age/gender and region.
8) Finally, the calibration weights from steps 6 and 7 were combined and scaled so that the average weight was equal to 1.

These steps are discussed in turn. A more detailed description is provided in the wave 8 technical report.

Non-response weights for Cohort 3

For the 633 Cohort 3 core members eligible for the main interview in wave 8 who responded to (all of) waves 3–7 (and remaining in private households in

[43] Age is defined here as age at 1 March 2016, immediately prior to the beginning of wave 8 fieldwork.

England), response to wave 8 was modelled on a range of household- and individual-level information collected at wave 7. The analysis was conducted using the non-response weight derived at wave 7 to ensure that the wave 8 weight did not replicate any adjustment made by the wave 7 weight.

The results showed significant differences between respondents and non-respondents on a number of characteristics (after controlling for gender and region, which were also included in the model):

- highest educational qualification;
- self-reported health status;
- white/non-white ethnicity;
- NS-SEC.

Taking the inverse of the estimated probability of response created a non-response weight to adjust for non-response bias between waves 7 and 8 for a total of 567 respondents.

Non-response weights for Cohort 4

For the 1,507 Cohort 4 core members eligible for the main interview in wave 8 who responded to all waves 4–7 (and remaining in private households in England), response to wave 8 was modelled on a range of household- and individual-level information collected at wave 7. The analysis was conducted using the non-response weight derived in wave 7 to ensure that the wave 8 weight did not replicate any adjustment made by the wave 7 weight.

The results showed significant differences between respondents and non-respondents on a number of characteristics (after controlling for age/gender and region, which were also included in the final model):

- housing tenure;
- self-reported health status;
- number of people in household.

Taking the inverse of the estimated probability of response created a non-response weight to adjust for non-response bias between waves 7 and 8 for a total of 1,383 respondents.

Non-response weights for Cohort 6

For the 658 Cohort 6 core members eligible for the main interview in wave 8 (and remaining in private households in England), response to wave 8 was modelled on a range of household- and individual-level information collected at wave 7. The analysis was conducted using the non-response weight derived in wave 7 to ensure that the wave 8 weight did not replicate any adjustment made by the wave 7 weight.

The results showed significant differences between respondents and non-respondents for white/non-white ethnicity only (after controlling for gender and region, which were also included in the final model).

Taking the inverse of the estimated probability of response created a non-response weight to adjust for non-response bias between waves 7 and 8 for a total of 557 respondents.

Non-response weights for Cohort 7

For the 298 Cohort 7 core members eligible for the main interview in wave 8 (and remaining in private households in England), response to wave 8 was modelled on a range of household- and individual-level information collected at wave 7. The results showed significant differences between respondents and non-respondents on a number of characteristics (after controlling for gender and region, which were also included in the final model):

- highest educational qualification;
- self-reported health status;
- number of people in household.

Taking the inverse of the estimated probability of response created a non-response weight for the 229 respondents to adjust for non-response bias between waves 7 and 8.

Cross-sectional weights for those aged 64+

Core members aged 64+ responding at wave 8 belonged to one of three groups:

1) Cohort 1 core members who had taken part in all eight waves of ELSA;[44]
2) Cohort 4 core members who took part in waves 4, 5, 6, 7 and 8;[45]
3) Wave non-responders (i.e. core members from Cohorts 1 and 4 who had returned to the study at wave 8 after missing one or more previous waves).[46]

At wave 3, it was found that the following socio-demographic variables were predictive of wave non-response when compared with response to all waves:

- housing tenure;
- white/non-white ethnicity;
- highest educational qualifications;
- marital status.

In order to combine the three groups to create a representative sample of people aged 64+, it was necessary to make sure, as far as possible, that the characteristics of the combined sample match those of the population. In order to do this, estimates of population characteristics were required.

The first two groups already had weights derived to adjust for non-response at wave 8 as well as previous waves of ELSA and HSE. Combining these groups provided a basis from which to estimate the population characteristics of those aged 64+. Before these estimates could be derived, two adjustments were necessary:

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[44] A small number of these respondents had moved to Scotland or Wales and were therefore given a zero cross-sectional weight.

[45] A small number of these respondents had moved to Scotland or Wales and were therefore given a zero cross-sectional weight.

[46] A small number of these respondents had moved to Scotland or Wales and were therefore given a zero cross-sectional weight.

1) the non-response weights of those aged 63–82 (who come from Cohorts 1 and 4) were scaled down so that this group were in the correct proportion compared with those aged 83 and above (who come from Cohort 1 only);
2) these weights were then calibrated to mid-2016 household population estimates of age/gender and region.

Estimates of housing tenure, white/non-white ethnicity, highest educational qualification and marital status were then derived from the combined groups weighted by the resulting weights (the same characteristics were used as in waves 3–7 for consistency).

The non-response weights for *all* core members aged 64+ at wave 8 (i.e. the two groups already combined plus the third group of wave non-responders) were then adjusted using calibration weighting so that the resulting weights, when applied to the three groups combined, provide a sample profile that matches the population estimates on the four socio-demographic characteristics plus estimates of age/gender and region of those aged 64+ (from mid-2016 household population estimates; see Table 5.39).

Table 5.39. Household population estimates

Age	Men	Women	Total	Men	Women	Total
				%	%	%
52–54	1,125,259	1,156,398	2,281,657	13.1	12.2	12.6
55–59	1,658,414	1,699,711	3,358,125	19.3	17.9	18.6
60–64	1,426,669	1,487,930	2,914,599	16.6	15.7	16.1
65–69	1,459,268	1,552,365	3,011,633	17.0	16.4	16.7
70–74	1,125,473	1,230,838	2,356,311	13.1	13.0	13.0
75–79	813,168	945,235	1,758,403	9.5	10.0	9.7
80–84	563,918	716,678	1,280,596	6.6	7.6	7.1
85+	427,195	698,690	1,125,885	5.0	7.4	6.2
Total	8,599,364	9,487,845	18,087,209	100	100	100

Note: Mid-2016 England household population (aged 52 and over).
Source: Calculated from the Office for National Statistics (ONS), Annual Mid-Year Population Estimates for England and Wales, 2016.[47]

Cross-sectional weights for those aged 52–63

Responding core members aged 52–63 at wave 8 came from Cohorts 3, 4, 6 and 7.[48] These groups were combined and their non-response weights were adjusted using calibration weighting so that the resulting weights provide a sample profile that matches population estimates of age/gender and region (from mid-2016 household population estimates) for those aged 52–63.

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[47] ELSA is weighted to the household population in England, excluding those in institutions. As the ONS no longer produces household population estimates, these are calculated by adjusting the latest ONS mid-year residential population estimates. The adjustment is based on the ratio between the (2011) census residential and household population figures for each age and gender grouping within each region.

[48] A small number of these respondents had moved to Scotland or Wales and were therefore given a zero cross-sectional weight.

Putting the cross-sectional weights together

The final step in the calculation of the cross-sectional weights was to take the calibrated weights from the two groups (52–63 and 64+) combined and to scale them so that they are in the correct proportion in the final weighted sample. The final weights were then scaled so that the average weight was equal to 1.

The profile of the combined core member respondents, weighted by the cross-sectional weight, is presented in Table 5.40.

Table 5.40. Achieved (combined) sample of core members, by age at wave 8 interview and by gender

Age at wave 8 interview	Men	Women	Total	Men %	Women %	Total %
52–54	444	456	900	13.1	12.2	12.6
55–59	654	670	1324	19.3	17.9	18.6
60–64	563	587	1149	16.6	15.7	16.1
65–69	575	612	1188	17.0	16.4	16.7
70–74	444	485	929	13.1	13.0	13.0
75–79	321	373	693	9.5	10.0	9.7
80–84	222	283	505	6.6	7.6	7.1
85+	168	276	444	5.0	7.4	6.2
Weighted N	3,391	3,742	7,133	100	100	100
Unweighted N	3,150	3,983	7,133	100	100	100

Note: Respondents to wave 8, including proxies but excluding those in institutions. Columns may not add up to 100% because of rounding.

5.9.4 Nurse weights

As described in Section 5.4, unlike in previous waves where all core members responding to the main interview were eligible for a nurse visit, at wave 8 a subset of respondents was pre-selected (prior to fieldwork) to be offered a nurse visit. The selection was done using purposive sampling (within cohort) and prioritised those who had responded to all previous nurse visits (at waves 2, 4 and 6). Some respondents were therefore not offered the chance to receive a nurse visit (including all of those from cohort 7). For this reason, it was not considered appropriate to calculate a non-response weight for the nurse sample in the usual manner (i.e. by modelling the probability of response excluding those who were not eligible). However, for practical purposes, a weight was created that treated those respondents who were not selected for a nurse visit as non-respondents. This means that the weighted sample remains unbiased with respect to the measures used to construct the weight. However, the chances of bias with respect to other unmeasured characteristics is somewhat higher than it would have been had everyone been given a chance to respond. The same goes for unweighted analysis. **This should be borne in mind when doing any analysis on the wave 8 nurse data**.

For the 6,904 core members from Cohorts 1, 3 4 and 6 living in private households in England who completed a full or partial wave 8 main interview, response to the nurse visit was modelled on a range of household- and individual-level information collected from the ELSA wave 8 main interview.

(Cohort 7 members were not included because no one from Cohort 7 was pre-selected for the nurse visit prior to fieldwork.) The weighting strategy aimed to minimise any bias arising from differential non-response (and/or the selection procedure used). The analysis was conducted on data weighted by the wave 8 cross-sectional weight.

The results showed significant differences on a number of characteristics between (core member) respondents who received a nurse visit and those who did not or were not selected to receive one:

- age by gender;
- region;
- IMD quintile;
- highest educational qualification;
- white/non-white ethnicity;
- marital status;
- housing tenure;
- self-reported general health;
- number of people in household;
- level of participation in mild physical activity;
- self-assessed hearing.

A non-response weight for the 3,471 respondents who received a nurse visit was created by taking the inverse of the estimated probability of response. The final nurse weight was a product of this non-response weight and the wave 8 cross-sectional weight (scaled so that the average weight was equal to 1).

5.9.5 Blood weights

For the 3,471 core members living in private households in England who responded to the nurse visit, response to the blood sample was modelled on a range of household- and individual-level information collected from the ELSA wave 8 main interview. The weighting strategy aimed to minimise any bias arising from differential non-response. The analysis was conducted on data weighted by the wave 8 nurse weight.

The results showed significant differences on a number of characteristics between (core member) respondents who provided a useable blood sample and those who did not and/or were not selected to provide one:

- age by gender;
- region;
- white/non-white ethnicity;
- whether they have a long-term limiting illness;
- level of participation in mild physical activity;
- level of participation in moderate physical activity;
- self-assessed eyesight condition.

A non-response weight for the 2,479 respondents who provided a useable blood sample was created by taking the inverse of the estimated probability of response. The final blood weight was a product of this non-response weight and the wave 8 nurse weight (scaled so that the average weight was equal to 1). **The same warning described above (for the nurse weights) also applies**

to the blood weights and all analysis conducted using the wave 8 blood analysis data.

5.9.6 Self-completion weights

For the 7,133 core members living in private households in England who completed a full or partial wave 8 main interview, response to the main self-completion questionnaire was modelled on a range of household- and individual-level information collected from the ELSA wave 8 main interview. The weighting strategy aimed to minimise any bias arising from differential non-response to the self-completion questionnaire. The analysis was conducted on data weighted by the wave 8 cross-sectional weight.

The results showed significant differences between (core member) respondents to the self-completion questionnaire and non-respondents on a number of characteristics:

- age by gender;
- region;
- urban/rural;
- highest educational qualification;
- white/non-white ethnicity;
- housing tenure;
- self-reported general health;
- whether they have a long-term limiting illness;
- financial unit type;
- whether they have children (and whether they live with them);
- current work/activity status;
- whether they had help with showcards.

A non-response weight for the 6,257 respondents to the self-completion questionnaire was created by taking the inverse of the estimated probability of response. The final self-completion weight was a product of this non-response weight and the wave 8 cross-sectional weight (scaled so that the average weight was equal to 1).

5.9.7 Sexual activity self-completion questionnaire weights

For the 7,133 core members living in private households in England who completed a full or partial wave 8 main interview, response to the sexual activity self-completion questionnaire was modelled on a range of household- and individual-level information collected from the ELSA wave 8 main interview. The weighting strategy aimed to minimise any bias arising from differential non-response to this self-completion questionnaire. The analysis was conducted on data weighted by the wave 8 cross-sectional weight.

The results showed significant differences between (core member) respondents to the sexual activity self-completion questionnaire and non-respondents on a number of characteristics:

- age by gender;
- region;
- highest educational qualification;
- white/non-white ethnicity;

- housing tenure;
- marital status;
- self-reported general health;
- number of people in household;
- whether they have children (and whether they live with them);
- current work/activity status;
- whether they had help with showcards.

A non-response weight for the 4,883 respondents to the sexual activity self-completion questionnaire was created by taking the inverse of the estimated probability of response. The final sexual activity self-completion weight was a product of this non-response weight and the wave 8 cross-sectional weight (scaled so that the average weight was equal to 1).

5.10 Conclusions

In this chapter, we aimed to provide an overview of the survey methodology for ELSA wave 8. The main topics included sample design, interview content, field and study response rates, and weighting of the data.

The format of the ELSA interview itself has remained relatively unchanged over time, with interviews every two years and nurse visits every four years, although at wave 8 the nurse visit was offered for the first time only to a subsample of core members. Over the waves, ELSA interviewers have consistently worked hard to maintain the panel of ELSA sample members. At wave 8, field household contact rates of over 90% were achieved for all five existing ELSA cohorts, with Cohorts 1, 3 and 7 achieving 95% or over.

The prior experiences of sample members within each cohort need to be considered when interpreting response rates at wave 7. For Cohort 1 members, this was the eight ELSA interviews they had been asked to do. Cohort 3 members joined ELSA at wave 3 (so wave 8 represented their sixth wave of ELSA interviewing), for Cohort 4 members, wave 8 was their fifth interview, for Cohort 6 members, wave 8 was their third interview, and for Cohort 7 their second interview. Levels of non-response do tend to accumulate over time as further waves of interviewing are conducted and, as expected, the highest study response rates were found at wave 8 amongst those existing members who joined ELSA most recently (Cohort 7). For example, the study response rate among core members still believed to be eligible at wave 8 was 55.2% for Cohort 1, 60.0% for Cohort 3, 70.3% for Cohort 4, 71.7% for Cohort 6 and 76.6% for Cohort 7. In contrast, the field response rates, among cases issued to interviewers, tend to be the highest among the most established cohorts, compared with those who have joined ELSA more recently. It was therefore important to present the field and, particularly, study response rates separately for each cohort rather than just producing combined rates.

Of all wave 8 interviews, 54.8% were with those belonging to Cohort 1 and 50.0% were with Cohort 1 core members. Original core members from wave 1 are still found to be highly committed to the study. Their fieldwork response rate showed that 83.6% of those issued to field (and still found to be eligible) had a wave 8 interview. The Cohort 1 individual re-interview rate at wave 8 among those also interviewed at the previous wave was 90.0%. There is a wealth of data accumulating for this group, with 45.5% of still eligible Cohort 1 core members having been interviewed at every wave (the longitudinal study response rate).

Cohort 3 sample members made up 11.9% of the total achieved sample at wave 8 and Cohort 3 core members made up 8.6% of the achieved sample at wave 8. Their introduction to ELSA at wave 3 was to ‘refresh’ the younger age group and to help ensure the study remained representative of all those aged 50 and above. The individual fieldwork response rate and re-interview rate for Cohort 3 core members (82.4% and 89.7%, respectively) were at levels similar to Cohort 1. Of eligible Cohort 3 members who took part in an initial interview at wave 3, 50.7% have taken part in every wave since they joined the study.

Cohort 4 accounts for 19.7% of achieved interviews at wave 8 (and core members from Cohort 4 account for 17.4%) covering core members aged 60–85 at wave 8. This cohort had comparable fieldwork response and re-interview rates to Cohorts 1 and 3 (83.4% and 91.0%, respectively). Of the eligible Cohort 4 members who took part in an initial interview at wave 4, 64.1% have taken part in every wave since they joined the study.

Cohort 6 accounts for 9.6% of the achieved interviews at wave 8 (core members from Cohort 6 account for 6.9% of the achieved interviews). This cohort was introduced to refresh the younger end of the sample. For this less established cohort, at its third wave of contact, the fieldwork response and re-interview rates (73.8% and 86.2%, respectively) were somewhat lower than those of the oldest cohorts. In terms of longitudinal study response rates, of the eligible Cohort 6 members who took part in an initial interview at wave 6, 68.6% also took part in an interview at waves 7 and 8.

Cohort 7 was introduced at wave 7 and accounts for 4.1% of the achieved interviews at wave 8 (with core members from Cohort 7 accounting for 2.7% of the achieved interviews). As with Cohort 6, this cohort was introduced to refresh the younger end of the sample. At this second wave of fieldwork, only core members, all productive at wave 8, were issued to field. The individual fieldwork response rate (i.e. also the re-interview rate at the second wave) among issued Cohort 7 core members was 78.2%. Expressed in terms of study response rates, 76.6% of the still eligible original Cohort 7 core members who joined in wave 7 took part again in wave 8.

For all the cohorts, refusals made up the biggest component of non-response at wave 8.

The response rates in this chapter provide useful indicators of the success of panel maintenance. However, it was also important to investigate the impact of any differential non-response (i.e. whether those with certain characteristics were more likely to respond than others). The section on weighting highlights how we attempt to minimise any bias arising from sample loss after each wave. Key characteristics of non-respondents and respondents are presented, and a summary is given of how the longitudinal and cross-sectional weights at wave 8 were constructed. It also covers the process of combining Cohorts 1, 3, 4, 6 and 7 to facilitate cross-sectional analysis of all core members at wave 8.

Of particular note is the different nature of the wave 8 nurse and blood weights, compared with previous nurse waves, given the purposive nature of the wave 8 nurse sample.

Over time, the information about differential non-response can help inform fieldwork practices to maximise participation by those groups most at risk of attrition, as well as strategies for sample refreshment to further help keep the ELSA sample representative of the 50+ population in England.

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E. Economics domain tables

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Introduction

E.1 This chapter presents selected data tables from the Economics domain of the English Longitudinal Study of Ageing (ELSA). The tables are split into two main sections. The first section presents cross-sectional data from wave 8 of ELSA, which took place from May 2016 to June 2017. The second section presents results that make use of the longitudinal aspect of the ELSA data.

E.2 Both main sections are further divided into three subsections, each containing information on income, pensions, wealth and other measures of resources, and labour market participation.

E.3 The variables included in each table have been selected to provide a broad picture of the data available from the Economics domain of ELSA. A glossary of the measures is provided in the annex to this chapter.

E.4 The unit of observation in all tables is the individual. All cross-sectional tables are based on the cross-section of ELSA sample members in each wave of data aged 55 and above. In previous reports, we have based tables on those aged 50 and above (or 52 and above in years where there is no refreshment sample). The reason for not including the 50–54 age group in the wave 8 report tables is the relatively low number of those in this age group in the wave 8 sample, which would result in small cell sizes and reduce the reliability of analysis. There are two contributing factors for the small sample size of those aged 50–54. First, wave 8 did not contain a refreshment sample, so there are no sample members aged 50 or 51. Secondly, the numbers of those aged 52–54 are also relatively low (proportional to the size of the age group in population) compared with older age groups in the ELSA sample, due to the limited numbers in these age groups available for sampling from the Health Survey for England.

E.5 In this report, all longitudinal tables are based on individuals who have responded in all of waves 4–8 unless otherwise specified. In previous reports, we have selected individuals who responded in all waves since wave 1. The reason for this change is that the cohort of wave 1 sample members is getting increasingly smaller – particularly those who were in older age groups at wave 1 – and wave 4 was the first wave where the full age range was refreshed.

E.6 All numbers are based on weighted data. Both unweighted and weighted frequencies (*N*) are reported. For cross-sectional analyses, cross-sectional weights are used. For longitudinal analyses, appropriate longitudinal weights are used. All values are expressed in January 2017 prices using the Consumer Prices Index including mortgage interest payments, ground rent and dwelling insurance.[49]

[49] https://www.ons.gov.uk/economy/inflationandpriceindices/adhocs/008572consumerpriceindicesseriesexcludingrentsmaintenancerepairsandwaterchargesfortheperiodjanuary1996toapril2018.

Cross-sectional tables

Income

E.7 Table E1a shows mean *unequivalised* net weekly family income by age and family type. As with all tables in this report, the unit of observation is the individual but each individual is assigned the income level of their family (where a family is defined as a couple or a single person and any children aged under 18 they may have). Table E1b shows mean *equivalised* net weekly family income by age and gender.

E.8 Equivalising income is one way to compare income across different family types. A couple will need more income than a single person to be equally well off, but because of economies of scale involved with sharing they will not need twice as much income to be as well off. Although equivalising is useful in making comparisons across different family types, the process of equivalising means that assumptions have to be made about the extent of economies of scale and there are many different equivalence scales that could be used. For this reason, Table E1a shows numbers that are unequivalised so that it is possible to see the actual level of income unadjusted for household size.

E.9 The unequivalised numbers in Table E1a are grouped into family types so that comparisons can be made across age groups *within* household types. Tables E1a and E1b look at mean total income and also aggregate income into some broad components: employment income, self-employment income, private pension income, state pension income, state benefit income, asset income and other income. Table E1b groups individuals into groups defined by age and gender.

E.10 Looking at all family types, Table E1a reveals that mean net unequivalised income is £564.48 per week. Converting all values to an equivalent adult basis, Table E1b reveals that mean net equivalised income is £404.85 per week. At younger ages, employment income is the biggest component of total income, whereas at older ages private and state pension income become much more important.

E.11 Tables E2a and E2b look at the distribution of total net weekly family income. In a similar way to Tables E1a and E1b, Table E2a looks at the distribution of total *unequivalised* income by age and family type and Table E2b looks at the distribution of total *equivalised* income by age and gender. The first column of numbers reports the mean income level and the remaining columns report various percentile points including the median level.

Pensions, wealth and other measures of resources

E.12 Income is just one way to measure financial resources and, particularly in the older population, other resources may be important. This section looks at financial wealth, household spending, private pension membership and a measure of adequacy of financial resources in the future.

E.13 Table E3 looks at average (mean and median) wealth by age and family type. Total net (non-pension) wealth is reported along with some broad components of wealth: net financial wealth, net physical wealth (including secondary housing) and net primary housing wealth. Table E4 looks at the mean of total (non-pension) wealth along with various percentile points by age and family type. Primary housing wealth makes up the largest component of total (non-pension) wealth for all groups. There is a large amount of dispersion in the total wealth distribution. Looking at single women aged 60–64, for example, Table E4 reveals that 25% of this group have total wealth of £700 or less, while 25% have £288,100 or more. The wealth distribution is much more unequal than the total income distribution. The ratio of the 75th percentile to the 25th percentile of income for all individuals (Table E2b) is 2.1, meaning that the 75th percentile is 2.1 times larger than the 25th percentile. In contrast, the ratio of the 75th percentile to the 25th percentile of total wealth for all individuals (Table E4) is 4.0.

E.14 Tables E5a and E5b look at private pension membership (pensions from all non-state sources). Private pension wealth can be an important potential source of resources for the older population and private pension membership is a useful proxy for private pension wealth. Table E5a looks at private pension membership by age and gender for all workers and non-workers below the state pension age (SPA) and Table E5b reports similar numbers for workers only. The first column of numbers in Tables E5a and E5b report the percentage of individuals who are members of a private pension scheme. The next three columns of numbers break this figure down into those who are currently contributing to a private pension scheme, those who are receiving income from a private pension scheme and those who have retained rights in a private pension scheme. Because individuals can have multiple pensions at different stages of contribution, receiving income and retaining rights, the second, third and fourth columns of numbers do not sum to the total percentage of individuals who are members of a private pension scheme. The numbers show, for example, that 87% of men (workers and non-workers) aged 55–64 are currently a member of at least one private pension scheme. Breaking that down further, the numbers show that 52% of men aged 55–64 are currently contributing to at least one private pension scheme, 34% are receiving an income from at least one private pension scheme and 39% have retained rights in at least one private pension scheme.

E.15 The next measure of resources that we report is household spending. Household spending may be a more useful indication of the level of resources available for a household because consumption tends to be smoothed across time. A retired household may have low income but may be drawing down assets in order to fund its consumption. Table E6 looks at the level of spending on some very broad types of goods and services by age and family type. Note that there are some large outliers in the level of spending on transfers outside the home, which, combined with relatively small sample sizes, push up the level of the mean in some groups so any patterns in transfer expenditure should be interpreted with caution.

E.16 Current resources give us a useful picture of economic well-being, but respondents may be aware of other issues that might determine how well off they feel or how well off they expect to be in the future. For example, a respondent may have health issues that might affect their future expected resources; or they may be expecting to help in the care of elderly parents, which again might reduce their future expected resources. Using the expectations question methodology (see definitions in the annex to this chapter), respondents are asked to report the chances that they will, at some point in the future, have insufficient resources to meet their needs, where a higher number indicates a higher chance of having insufficient resources. The results are reported by age, gender and income group in Table E7. Because expectations are asked on an individual basis, we split couples into 'partnered men' and 'partnered women' so that we can look at differences between men and women in couples. On average, across all age and income groups, there are differences in expectations of partnered women and partnered men, despite the fact that they have access to the same resources. Partnered women taken as a whole, on average, are more pessimistic than their male counterparts. Single women are, on average, more pessimistic than their male counterparts, although they may have good reason to expect to have insufficient resources, given that they have lower incomes on average, as Table E1a shows.

Labour market participation

E.17 The tables in this section look at different aspects of labour market participation. Table E8 looks at the percentage of respondents working full-time, part-time and either full- or part-time by age, gender and wealth group. We restrict our sample to those aged 74 or below.

E.18 Using the expectations question methodology (see definitions), Table E9 reports the mean chances of working at future ages. The age that respondents are asked to consider when thinking about their chances of working depends on their current age. The first column of numbers shows the ‘target age’ for each age group. For example, men aged 55–59 are asked about the chances of working at age 60, while men aged 60–64 are asked about the chances of working at age 65. The second column of numbers reports the mean chances within each age and gender group. The five columns on the right-hand side report the mean chances within each age, gender and wealth group.

E.19 Health is an important factor in an individual’s ability to work. Respondents are asked whether they have a health problem that limits the kind or amount of work they can do. If respondents are currently working and they report that they do have a health problem that limits the kind or amount of work they can do, they are asked a follow-up question about whether this health problem limits the kind or amount of work they can do in their current job. The results in Table E10 combine the information from these two questions. The first column of numbers shows the percentages of individuals (by age, gender and wealth group) who do not report that they have a limiting health problem and the second column of numbers shows the percentage who do. The next three columns of numbers further break down the group with a health limitation into those who have a limiting health problem but are not currently working, those who have a limiting health problem that does not limit them in their current job and those who have a limiting health problem that does limit them in their current job.

E.20 For example, 20% of men aged 55–59 have a health problem that limits the kind or amount of work they can do. This 20% can be further broken down into 11% who are not working, 4% who are working but whose health problem does not limit them in their current job and 5% who are working and whose health problem does limit them in their current job. The numbers in Table E10 also reveal a stark difference between the lowest and highest wealth groups. Looking at all men aged 55–64, the table shows that of the 50% of men in the lowest wealth group who have a limiting health problem, only 22% ((4%+7%)/50%) are in work. This contrasts with the highest wealth group, where a much lower proportion have a limiting health problem (10%) and, of those who do, 50% ((1%+4%)/10%) are in work. A similar pattern is found for women.

E.21 As well as current health problems, respondents’ expectations about the effect of their health on their ability to work in the future may be an important factor in their decision making. Table E11 reports the mean chances that health will limit respondents' ability to work at age 65 by age, gender and wealth group, where a higher number indicates a higher chance that health will limit the respondent's ability to work. This information was collected using the expectations questions methodology (see definitions) for workers aged below 65 only.

Longitudinal tables

Income

E.22 Cross-sectional tables using a series of data from different time periods combine the effect of age, time and differential mortality. For example, looking at cross-sectional data on income over time, it would not be possible to isolate the effect of age on income because we cannot strip out the effect of time or differential mortality (i.e. the observation that higher-income individuals tend to live longer than lower-income individuals). Because longitudinal data follow the same individuals over time, by selecting a sample of individuals who are interviewed in every wave we can eliminate the effect of differential mortality.

E.23 Table EL1a takes the set of individuals who have responded in every wave from waves 4 to 8 and tracks average total family income by age, gender and family type in 2008–09 (the 'baseline' year) across time (waves). Tables EL1b–EL1e are identical in structure to Table EL1a but look at the broad components of income instead of total income. 'Earnings' is the sum of employment income and self-employment income. Note that family type may change over time as couples form or dissolve, but an individual is defined in terms of their couple status at baseline. Although income is measured at the family level, because family structure may change we look separately at partnered men and partnered women. Partnered women are more likely to see a change in their family structure due to widowhood.

E.24 Tables EL2a–EL2e are similar to Tables EL1a–EL1e but track income by age and education. Education can be a useful proxy for social status or permanent income.

E.25 Table EL3 looks at a measure of inequality. The measure chosen is the interquartile ratio, which is defined as the size of the 75th percentile of income relative to the 25th percentile of income (p75/p25). An interquartile ratio of 2.00 would mean that the 75th percentile point was twice as large as the 25th percentile point of income. A larger number implies a more dispersed distribution of income and higher inequality. In general, Table EL3 shows declining inequality over time for this balanced panel.

Pensions, wealth and other measures of resources

E.26 Tables E5a and E5b in the cross-sectional tables look at private pension membership. However, private pension membership at a particular point in time is only part of the story. It is the amount that individuals accumulate in that pension fund that determines its value. As individuals move into or out of employment or their circumstances change, their pension contributions may vary. Table EL4a shows how persistently individuals contribute to their private pensions. The table takes the groups of men and women who are below the SPA at baseline and reports the percentage of men and women who never contribute to a private pension in any of the waves in which they are below the SPA (taking into account the changes to SPA that came into effect over the period), the percentage who contribute in some waves in which they are below the SPA and the percentage who contribute in all waves in which they are below the SPA. For example, a man aged 60 at baseline would be observed to be below the SPA at waves 2 and 3 (he would be 62 and 64, respectively) but above the SPA in wave 4 (he would be 66). If this individual were observed to be contributing to a private pension in waves 1 and 2 but not in wave 4 (when he is above the SPA), then he would be counted as ‘always’ contributing to a private pension. The reason for doing this is to reduce the extent to which not contributing to a private pension is due to leaving the labour market. The table is based on individuals who are aged below the SPA at baseline and who are employed or self-employed at baseline, and the proportions are reported by age, gender and (baseline) wealth group.

E.27 Table EL4a shows that a rather low proportion of men contribute to a private pension in all waves in which they are aged below the SPA. Amongst all men aged 50–64 at baseline, only 30.9% always contribute. Amongst women aged 50–59 at baseline, 37.7% always contribute. To reduce the effect that leaving the labour market has on pension contributions, we have not included years in which the individual is above the SPA when calculating how many waves an individual has contributed to a private pension. However, it is still the case that some of the dynamics of pension contributions may be due to exits out of the labour market before the SPA. So, for example, although a man aged 60 at baseline may have a full contribution history, if he retires at age 62 and therefore stops contributing to his pension, he will be counted in Table EL4a as only ‘sometimes’ contributing to a private pension.

E.28 Table EL4b shows an alternative way of looking at the persistency of making private pension contributions that attempts to eliminate employment dynamics as an explanation for private pension contribution dynamics. This table is calculated on a similar basis to Table EL4a except that only those individuals who are in work (employed or self-employed) in all waves that they are below the SPA are included. This means that if an individual is observed not contributing, it is not simply due to the fact that they have left employment or self-employment. Table EL4b shows that even conditioning on being in work in all waves, the proportion who contribute to a private pension in every wave is rather low (45.4% for men aged 50–64 and 49.9% for women aged 50–59).

E.29 An alternative way to assess how well off individuals are is to ask them directly how well they are managing financially. Respondents in ELSA are asked which phrase best describes how they (and their partner) are getting along financially. The question is asked once per family and the response categories are ‘manage very well’, ‘manage quite well’, ‘get by alright’, ‘don’t manage very well’, ‘have some financial difficulties’ and ‘have severe financial difficulties’. Looking at the first three columns of data in Table EL5, anyone who puts themselves into any of the bottom three categories (‘don’t manage very well’, ‘have some financial difficulties’, ‘have severe financial difficulties’) is defined as ‘Reports having financial difficulty’. These columns report the percentage of single men, single women and couples who never report having financial difficulty, the percentage who sometimes report having financial difficulty and the percentage who report having financial difficulty in every wave (4–8). For example, 81.7% of single men did not report having financial difficulty in any of the seven waves, 17.6% sometimes reported having financial difficulties and 0.7% reported having financial difficulty in every wave.

E.30 The numbers in columns five to seven of Table EL5 use the same financial difficulties question but, instead of looking at families who report financial difficulties, they look at how many people report that they are managing very well (those putting themselves into the highest category). Again, the columns report the percentage of single men, single women and couples who never report that they manage very well, the percentage who sometimes report that they manage very well and the percentage who report that they manage very well in every wave (4–8). For example, 12.3% of single men reported in every wave that they manage very well, 50.4% sometimes reported managing very well and 37.3% never reported that they manage very well.

E.31 Tables EL6a, EL6b and EL6c look at another measure of well-being and resources. In wave 2 onwards, respondents were asked whether having too little money stops them from doing any of the following things: buying your first choice of food items, having your family and friends round for a drink or meal, having an outfit to wear for social or family occasions, keeping your home in a reasonable state of decoration, replacing or repairing broken electrical goods, paying for fares or other transport costs to get to or from places you want to go, buying presents for friends or family once a year, taking the sorts of holidays you want, and treating yourself from time to time. An index of material deprivation can be created by counting the number of items that respondents report that they cannot afford.

E.32 The question is asked once per individual, which means that even if members of a couple have access to the same financial resources, they may feel differently about whether they have too little money. For this reason, we split couples into ‘partnered men’ and ‘partnered women’, so any potential differences between men and women can be seen.

E.33 Tables EL6a–EL6c look at the persistence of reporting having too little money to do three or more items on the list described above. The numbers show the percentage of men or women who never report three or more items on the list (in waves 4–8), the percentage who report three or more items on the list in some waves (at least one wave but not all of waves 4–8) and the percentage who report three or more items on the list in every wave (waves 4–8). Table EL6a looks at the percentages by education for single men, single women, partnered men and partnered women aged 50 to SPA at baseline. Table EL6b is similar but shows the percentages for those aged SPA to 74 and Table EL6c shows the percentages for those aged 75 or above.

Labour market participation

E.34 Tables EL7a and EL7b show labour market participation by wealth group and age for men and women, respectively. The first column of numbers reports the percentage of the baseline (wave 4) longitudinal sample aged 50–74 who are employed (or self-employed) full- or part-time. The next five columns take the sample of individuals employed at baseline and report the percentage of those individuals who are employed in waves 5–8. By definition, 100% of the samples are employed in wave 4, but as we move further through time the percentage employed in each of the subsequent waves falls. For example, of the group of men who were aged 50–54 and in work in 2008–09 (wave 4), 77.7% are still in work approximately eight years later (wave 8).

E.35 Table EL8 also looks at labour market participation but it considers transitions back into the labour market. The first column of numbers reports the percentage of individuals who are not in employment at baseline (2008–09). The next five columns take the sample of people out of employment at baseline and report the percentage in employment at subsequent waves (by definition, 0% are employed in wave 4).

E.36 Tables EL9a and EL9b look at the persistency of health limiting an individual's ability to work, by wealth group and age. Respondents are asked whether they have a health problem that limits the kind or amount of work that they can do. As well as looking at the percentage of men (Table EL9a) and women (Table EL9b) who never report a limiting health problem and the percentage who always report a limiting health problem in waves 4–8, the tables also split those who sometimes report a limiting health problem into two distinct groups. The first is a 'transitory' group, for which we define a transitory limiting health problem as one that comes and goes throughout the five-wave period (a period spanning ten years). For example, if an individual reported that they had a limiting health problem in waves 4, 6 and 7, we would define that as transitory. We define a limiting health problem as 'onset' if an individual starts the five-wave period without a limiting health problem but then reports a limiting health problem at some point during the period and reports it in all subsequent waves. For instance, an individual who reported a limiting health problem in waves 6, 7 and 8 would be classed as having an 'onset' limiting health problem.

E.37 For example, Table EL9a shows that 68.4% of men aged 50–74 never had a limiting health problem in waves 4–8 and only 1.2% had a limiting health problem in every wave (waves 4–8). The second column of numbers in the table shows that 23.0% of men aged 50–74 sometimes had a limiting health problem that came and went over the five-wave period. The third column shows that 7.4% of men aged 50–74 sometimes had a limiting health problem but, unlike the group whose problem came and went, this group experienced the onset of the limiting health problem at some time in the five-wave period and it was not subsequently observed to go away during that time.

Annex AE. Definitions

AE.1 *Asset income:* Net income from any financial savings or investments (current and deposit accounts, ISAs, premium bonds, National Savings, shares, trusts, bonds, other savings income not covered elsewhere) and any rental income from property (second homes, farm or business property) expressed in January 2017 prices.

AE.2 *Balanced panel:* The set of individuals who are interviewed in all waves of interest.

AE.3 *Baseline:* The wave of data that is chosen to be the starting point for characteristics in longitudinal analysis that may change over time.

AE.4 *Earnings*: The sum of employment income and self-employment income

AE.5 *Education:* Low education is defined as leaving full-time education at or before compulsory school-leaving age. Medium education is defined as leaving full-time education after compulsory school-leaving age and before age 19. High education is defined as leaving full-time education at age 19 or above.

AE.6 *Employment income:* Net income from main and subsidiary jobs expressed in January 2017 prices.

AE.7 *Equivalisation:* Equivalising is a way of adjusting household resources to take account of different household sizes and the economies of scale involved in living with additional people in a household. An equivalence scale estimates how much expenditure or income different household types need to be equivalently well off, and it enables comparisons to be made across different family or household types. The equivalence scale used is the OECD scale, in which a single person with no children is taken as the benchmark. Secondary adults contribute 0.5 to the scale, meaning that a couple needs 50% more income than a single person in order to be assessed as equally well off. Children aged 13 and below contribute 0.3 to the scale and older children contribute 0.5. To convert the numbers to the equivalent amount that a childless couple spends, numbers should be multiplied by 1.5. Income is equivalised using a family-level equivalence scale and expenditure is equivalised using a household-level equivalence scale. Wealth is not equivalised. This is because there is no single accepted way to equivalise wealth. It is also not clear that it is sensible to equivalise wealth because the point at which wealth is used to fund consumption is likely to be in the future, when family composition may have changed compared with the current situation.

AE.8 *Expectations questions methodology:* ELSA includes a number of questions that ask respondents about their expectations of future events. Respondents are asked to report the chances from 0 to 100 that an event will happen in the future, where a higher number indicates a higher chance.

AE.9 *Family:* A couple or a single person and any children aged below 18 they may have who are living at home.

AE.10 *Income group:* To form income groups, we order all ELSA sample members according to the value of their total equivalised family income and divide the sample into five equal-sized groups. Where analysis is carried out using all ELSA sample members, the groups are equal in size and can be referred to as quintiles. Much of the analysis in this chapter is carried out using subsamples of the ELSA population.

Where analysis does not use the whole ELSA sample, the groups are unequal in size and are more accurately referred to as ‘income groups’. For consistency reasons, we use the term ‘income group’ rather than ‘income quintile’ throughout the chapter. The cut-off points for the income groups are shown in the following table, reported in January 2017 prices and rounded to the nearest £10.

	Income group definition, wave 1 (2002–03)	**Income group definition, wave 4 (2008–08)**	**Income group definition, wave 8 (2016–17)**
		£ per week equivalised	
Lowest	Less than £160	Less than £190	Less than £220
2nd	Between £160 and £240	Between £190 and £270	Between £220 and £290
3rd	Between £240 and £320	Between £270 and £370	Between £290 and £380
4th	Between £320 and £460	Between £370 and £530	Between £380 and £540
Highest	More than £460	More than £530	More than £540

AE.11 *Net financial wealth:* Net financial wealth is reported at the family level and is defined as savings (interest-bearing current and deposit accounts, cash ISAs) plus investments (premium bonds, National Savings, PEPs, shares, trusts, bonds, the saving element of life insurance, shares ISAs and life insurance ISAs) but not including pensions or housing and minus debt (outstanding balances on credit cards, loans, mail-order and other private debt but not including mortgages). Expressed in January 2017 prices.

AE.12 *Net housing wealth:* Net housing wealth is reported at the family level and is defined as the self-reported current value of primary housing (i.e. residential housing) less any debt outstanding on that house. Expressed in January 2017 prices.

AE.13 *Net physical wealth:* Net physical wealth is reported at the family level and is defined as wealth held in second homes, farm or business property, other business wealth, other land and other assets, such as jewellery, works of art or antiques. Expressed in January 2017 prices.

AE.14 *Other income:* Net income coming from individuals outside the household such as maintenance payments. Expressed in January 2017 prices.

AE.15 *Private pension income:* Net income from private pensions and annuities (from all non-state sources) expressed in January 2017 prices.

AE.16 *Self-employment income:* Net income from self-employment. This is defined as profit (converted to a weekly equivalent) for self-employed individuals who keep accounts or income from self-employment for those who do not keep accounts. Self-employment income can be negative if those keeping accounts make a loss. Expressed in January 2017 prices.

AE.17 *State benefit income:* Income from the following state benefits: incapacity benefit, employment and support allowance (wave 5 onwards), severe disablement allowance, statutory sick pay, attendance allowance, disability living allowance, industrial injuries allowance, war pensions, invalid care allowance (wave 1), carer’s allowance (wave 2 onwards), disabled person’s tax credit (wave 1), universal credit (wave 7 onwards), income support, pension credit (wave 2 onwards), working families' tax credit (wave 1), working tax credit (wave 2 onwards), jobseeker's allowance, guardian's allowance, widow's pension, child benefit and child tax credit (wave 2 onwards). State benefit income does not include housing benefit or council tax benefit. Expressed in January 2017 prices.

AE.18 *State pension age:* Various changes to the SPA have been phased in and further changes have been announced or planned. Women born on or after 6 April 1950 in our sample are affected by a gradual increase in the SPA between April 2010 and November 2018. Calculation of SPA in this report incorporates these changes. This means that for women, SPA varies according to date of birth. For the tables in this report, women aged up to 63 can be below SPA. Men currently in our sample are not currently affected by the changes and their SPA remains at 65. Further details can be found in a government document showing timetables for the SPA.[50]

AE.19 *State pension income:* Net income from state pensions (basic state pension, State Earnings-Related Pension Scheme/state second pension) expressed in January 2017 prices.

AE.20 *Total (family) income:* Total income is defined net of taxes and is the sum of employment income (including income from self-employment), private pension income, state pension income, other state benefit income (excluding housing benefit and council tax benefit), asset income and any other income. Total income is summed across family members (where a family is defined as a couple or a single person and any children aged below 18 they may have who are living at home) to obtain family income. Expressed in January 2017 prices.

AE.21 *Total non-pension wealth:* Total non-pension wealth is reported at the family level and is defined as the sum of net financial wealth, net physical wealth and net housing wealth. Expressed in January 2017 prices.

AE.22 *Wealth group:* To form wealth groups, we order all ELSA sample members according to the value of their total (non-pension) family wealth and divide the sample into five equal-sized groups. Where analysis is carried out using all ELSA sample members, the groups are equal in size and can be referred to as quintiles. Much of the analysis in this chapter is carried out using subsamples of the ELSA population. Where analysis does not use the whole ELSA sample, the groups are unequal in size and are more accurately referred to as 'wealth groups'. For consistency reasons, we use the term 'wealth group' rather than 'wealth quintile' throughout the chapter. The cut-off points for the wealth groups are shown in the following table, reported in January 2017 prices and rounded to the nearest £1,000.

	Wealth group definition, wave 1 (2002–03)	**Wealth group definition, wave 4 (2008–09)**	**Wealth group definition, wave 8 (2016–17)**
Lowest	Less than £22k	Less than £60k	Less than £71k
2nd	Between £22k and £132k	Between £60k and £201k	Between £71k and £210k
3rd	Between £132k and £229k	Between £201k and £303k	Between £210k and £354k
4th	Between £229k and £403k	Between £303k and £496k	Between £354k and £575k
Highest	More than £403k	More than £496k	More than £575k

[50] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/310231/spa-timetable.pdf.

AE.23 ***Notes to all tables***

The unit of observation in all tables is the individual.

All cross-sectional tables are based on the cross-section of ELSA sample members in each wave of data. This includes refreshment sample members.

All longitudinal tables are based on individuals who have responded in all of waves 4 to 8 unless otherwise specified.

All numbers are based on weighted data. Both unweighted and weighted frequencies (*N*) are reported.

Results based on an unweighted sample size of less than 50 respondents are reported in parentheses. Results based on an unweighted sample size of less than 30 respondents are suppressed.

For cross-sectional analyses, cross-sectional weights are used. For longitudinal analyses, longitudinal weights are used.

Values are converted to January 2017 prices using the Consumer Prices Index including mortgage interest payments, ground rent and dwelling insurance.

The fieldwork dates are shown in the following table.

	Fieldwork dates (inclusive)
Wave 1	March 2002 – March 2003
Wave 2	June 2004 – June 2005
Wave 3	May 2006 – August 2007
Wave 4	June 2008 – July 2009
Wave 5	July 2010 – June 2011
Wave 6	May 2012 – May 2013
Wave 7	June 2014 – May 2015
Wave 8	May 2016 – June 2017

Table E1a. Mean unequivalised net weekly family income (£), by age and family type: wave 8

	Empl. income	Self-empl. income	Private pension income	State pension income	State benefit income	Asset income	Other income	Total income	*Wted N*	*Unwted N*
Single men	**74.37**	**23.92**	**93.81**	**96.78**	**37.39**	**30.88**	**0.62**	**357.77**	***680***	***715***
55–59	236.91	42.73	39.79	0.00	60.47	51.96	2.16	434.01	*132*	*51*
60–64	125.73	37.32	82.36	1.23	56.92	29.52	0.38	333.47	*133*	*133*
65–69	15.40	34.88	115.27	145.61	18.40	24.05	0.18	353.79	*108*	*121*
70–74	9.51	4.61	104.88	155.03	23.93	24.82	0.70	323.48	*86*	*117*
75–79	0.93	20.46	100.34	157.32	31.95	22.48	0.11	333.59	*82*	*117*
80+	0.29	-1.17	128.61	170.51	23.07	26.21	0.00	347.53	*139*	*176*
Single women	**46.92**	**4.96**	**70.97**	**111.48**	**31.73**	**19.17**	**1.44**	**286.68**	***1,226***	***1,546***
55–59	159.71	6.73	28.21	0.00	51.15	14.87	3.65	264.32	*176*	*92*
60–64	127.50	16.47	63.76	37.31	43.34	28.66	1.41	318.47	*168*	*204*
65–69	31.40	9.73	90.65	132.27	27.20	29.26	0.56	321.07	*169*	*260*
70–74	11.15	1.63	94.85	145.66	21.02	17.73	1.23	293.28	*158*	*239*
75–79	2.48	0.85	77.89	166.19	17.57	20.97	1.05	287.00	*161*	*247*
80+	1.28	0.23	72.27	147.96	30.15	12.54	1.08	265.52	*393*	*504*
Couples	**197.64**	**55.29**	**189.81**	**150.25**	**23.75**	**59.66**	**1.12**	**677.52**	***4,255***	***4,550***
55–59	495.60	98.94	93.45	9.73	27.24	77.95	0.77	803.68	*989*	*391*
60–64	285.68	76.16	178.37	54.62	25.70	64.79	2.10	687.42	*830*	*938*
65–69	87.09	51.13	238.99	231.37	16.16	57.75	1.18	683.67	*901*	*1,142*
70–74	39.88	26.58	245.10	244.32	19.75	48.98	1.08	625.69	*675*	*929*
75–79	14.50	18.29	225.87	243.03	25.58	46.56	0.41	574.24	*446*	*618*
80+	4.68	4.91	206.76	247.64	32.58	41.37	0.68	538.63	*414*	*532*
All family types	**154.05**	**41.82**	**155.58**	**136.63**	**26.84**	**48.43**	**1.13**	**564.48**	***6,160***	***6,811***
55–59	423.77	80.72	79.15	7.42	33.86	66.75	1.30	692.98	*1,296*	*534*
60–64	243.31	62.71	150.02	45.75	32.00	55.26	1.79	590.85	*1,132*	*1,275*
65–69	72.56	43.71	206.44	209.33	17.95	50.59	1.00	601.58	*1,178*	*1,523*
70–74	32.09	20.23	206.11	218.98	20.36	41.34	1.07	540.17	*920*	*1,285*
75–79	10.08	14.46	176.32	214.86	24.46	37.71	0.53	478.41	*689*	*982*
80+	2.62	2.07	139.37	194.87	30.17	27.16	0.75	397.01	*946*	*1,212*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.1, AE.6, AE.9, AE.14–AE.17, AE.19, AE.20 and AE.23.

For related text, see E.7–E.10.

Table E1b. Mean equivalised net weekly family income (£), by age and gender: wave 8

	Empl. income	Self-empl. income	Private pension income	State pension income	State benefit income	Asset income	Other income	Total income	*Wted N*	*Unwted N*
Men	**125.43**	**36.23**	**116.96**	**95.44**	**19.76**	**36.57**	**0.78**	**431.18**	***2,920***	***3,008***
55–59	316.99	68.76	49.60	3.69	23.28	46.02	1.09	509.43	*644*	*227*
60–64	201.53	48.85	102.55	11.00	25.91	39.23	1.23	430.31	*557*	*564*
65–69	60.89	34.20	151.15	143.55	11.41	38.25	0.68	440.13	*571*	*650*
70–74	28.45	22.85	154.49	163.89	14.37	30.98	0.62	415.65	*439*	*613*
75–79	5.29	12.66	137.65	161.83	21.33	31.04	0.30	370.10	*320*	*455*
80+	2.78	1.90	139.41	165.46	22.16	25.57	0.36	357.64	*389*	*499*
Women	**89.07**	**22.02**	**106.81**	**107.74**	**21.84**	**32.73**	**0.94**	**381.13**	***3,240***	***3,803***
55–59	260.39	40.66	59.88	6.07	26.78	47.02	1.08	441.88	*652*	*307*
60–64	143.61	38.31	109.28	52.87	24.65	39.24	1.33	409.29	*575*	*711*
65–69	39.94	27.21	139.82	156.09	15.71	33.39	0.71	412.87	*607*	*873*
70–74	16.73	5.37	138.36	154.51	16.58	27.86	0.98	360.39	*480*	*672*
75–79	8.39	8.65	118.85	162.85	16.86	24.74	0.53	340.87	*369*	*527*
80+	1.35	0.88	88.03	154.00	27.66	18.02	0.85	290.79	*556*	*713*
All	**106.30**	**28.76**	**111.62**	**101.91**	**20.85**	**34.55**	**0.86**	**404.85**	***6,160***	***6,811***
55–59	288.51	54.61	54.77	4.89	25.04	46.52	1.08	475.43	*1,296*	*534*
60–64	172.09	43.49	105.97	32.29	25.27	39.24	1.28	419.62	*1,132*	*1,275*
65–69	50.09	30.60	145.31	150.01	13.62	35.74	0.70	426.08	*1,178*	*1,523*
70–74	22.33	13.72	146.07	158.99	15.52	29.35	0.80	386.79	*920*	*1,285*
75–79	6.95	10.51	127.58	162.37	18.94	27.67	0.42	354.45	*689*	*982*
80+	1.94	1.30	109.19	158.72	25.40	21.13	0.65	318.32	*946*	*1,212*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.1, AE.6, AE.7, AE.9, AE.14–AE.17, AE.19, AE.20 and AE.23.

For related text, see E.7–E.10.

Table E2a. Distribution of total net weekly unequivalised family income (£), by age and family type: wave 8

	Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile	*Wted N*	*Unwted N*
Single men	**357.77**	**131.74**	**203.00**	**284.06**	**431.08**	**609.60**	***680***	***715***
55–59	434.01	79.80	137.00	284.06	549.38	665.31	*132*	*51*
60–64	333.47	52.75	136.62	264.00	416.88	651.98	*133*	*133*
65–69	353.79	179.57	217.57	292.62	442.56	578.64	*108*	*121*
70–74	323.48	170.00	215.21	285.84	401.52	521.02	*86*	*117*
75–79	333.59	160.00	198.02	281.73	403.25	507.79	*82*	*117*
80+	347.53	179.53	235.48	306.82	415.44	535.04	*139*	*176*
Single women	**286.68**	**126.35**	**174.00**	**250.50**	**344.32**	**485.08**	***1,226***	***1,546***
55–59	264.32	69.98	106.76	273.46	348.19	507.76	*176*	*92*
60–64	318.47	103.51	159.64	260.70	369.03	574.53	*168*	*204*
65–69	321.07	154.76	182.88	259.57	362.37	510.24	*169*	*260*
70–74	293.28	156.31	187.79	252.44	373.07	483.40	*158*	*239*
75–79	287.00	158.86	188.12	249.39	340.20	476.91	*161*	*247*
80+	265.52	134.19	172.75	236.14	314.50	427.94	*393*	*504*
Couples	**677.52**	**303.83**	**405.24**	**561.58**	**811.16**	**1,117.71**	***4,255***	***4,550***
55–59	803.68	328.80	500.42	685.38	959.54	1,248.09	*989*	*391*
60–64	687.42	277.14	406.29	585.73	831.52	1,119.33	*830*	*938*
65–69	683.67	342.61	431.60	576.89	819.02	1,130.52	*901*	*1,142*
70–74	625.69	311.53	388.08	519.79	727.12	993.34	*675*	*929*
75–79	574.24	287.26	355.35	475.61	654.93	920.33	*446*	*618*
80+	538.63	271.84	350.28	452.83	614.34	845.45	*414*	*532*
All family types	**564.48**	**191.77**	**295.97**	**462.09**	**699.89**	**998.37**	***6,160***	***6,811***
55–59	692.98	191.58	346.20	588.91	864.38	1,176.70	*1,296*	*534*
60–64	590.85	168.31	300.86	491.84	768.00	1,070.39	*1,132*	*1,275*
65–69	601.58	233.01	353.16	503.20	739.87	1,036.58	*1,178*	*1,523*
70–74	540.17	211.43	313.69	446.75	642.45	895.05	*920*	*1,285*
75–79	478.41	192.54	278.41	387.71	552.17	812.65	*689*	*982*
80+	397.01	163.19	227.57	328.14	480.85	672.05	*946*	*1,212*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.9, AE.20 and AE.23. For related text, see E.9.

Table E2b. Distribution of total net weekly equivalised family income (£), by age and gender: wave 8

	Mean	10th percentile	25th percentile	Median	75th percentile	90th percentile	*Wted N*	*Unwted N*
Men	**431.18**	**180.09**	**252.01**	**357.48**	**522.29**	**715.69**	***2,920***	***3,008***
55–59	509.43	155.00	284.06	426.74	627.68	794.14	*644*	*227*
60–64	430.31	147.21	240.58	367.17	540.20	738.08	*557*	*564*
65–69	440.13	213.92	271.74	379.92	532.45	745.14	*571*	*650*
70–74	415.65	209.71	258.72	341.39	484.75	650.22	*439*	*613*
75–79	370.10	185.45	233.90	317.49	427.95	584.22	*320*	*455*
80+	357.64	182.10	235.48	301.89	412.93	566.48	*389*	*499*
Women	**381.13**	**156.87**	**223.21**	**315.12**	**461.89**	**645.18**	***3,240***	***3,803***
55–59	441.88	126.42	244.91	363.06	542.46	746.88	*652*	*307*
60–64	409.29	151.04	228.60	338.31	514.58	732.73	*575*	*711*
65–69	412.87	177.85	254.50	340.63	490.76	692.14	*607*	*873*
70–74	360.39	167.26	222.96	305.27	433.39	586.69	*480*	*672*
75–79	340.87	171.78	211.44	276.34	399.86	551.33	*369*	*527*
80+	290.79	146.25	185.60	254.54	342.74	467.89	*556*	*713*
All	**404.85**	**164.38**	**236.54**	**333.55**	**490.39**	**684.20**	***6,160***	***6,811***
55–59	475.43	145.54	267.99	397.78	581.72	768.51	*1,296*	*534*
60–64	419.62	148.96	238.80	352.50	526.04	733.41	*1,132*	*1,275*
65–69	426.08	195.69	262.89	359.60	510.55	714.49	*1,178*	*1,523*
70–74	386.79	182.28	241.33	320.57	452.62	611.45	*920*	*1,285*
75–79	354.45	175.56	221.36	296.48	413.92	576.72	*689*	*982*
80+	318.32	155.31	201.92	270.28	369.91	513.92	*946*	*1,212*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.7, AE.9, AE.20 and AE.23. For related text, see E.9.

Table E3. Mean and median wealth, by age and family type: wave 8

	Net financial wealth *£'000*		Net physical wealth *£'000*		Net primary housing wealth *£'000*		Net total (non-pension) wealth *£'000*		*Wted N*	*Unwted N*
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**		
Single men	**72.7**	**14.0**	**206.4**	**0.0**	**155.8**	**120.0**	**434.8**	**157.3**	***680***	***715***
55–59	72.1	3.0	841.7	0.0	148.5	84.2	1062.2	103.0	*132*	*51*
60–64	75.2	10.7	60.1	0.0	144.8	70.5	280.1	138.3	*133*	*133*
65–69	55.7	14.9	127.5	0.0	149.8	123.8	333.0	165.0	*108*	*121*
70–74	68.6	19.4	29.0	0.0	159.3	120.0	256.9	159.0	*86*	*117*
75–79	58.9	20.3	15.0	0.0	145.6	130.9	219.5	161.8	*82*	*117*
80+	94.6	28.1	29.0	0.0	181.9	150.7	305.4	205.0	*139*	*176*
Single women	**46.0**	**8.2**	**21.5**	**0.0**	**175.3**	**140.0**	**242.8**	**161.0**	***1,226***	***1,546***
55–59	29.1	0.5	16.6	0.0	157.6	120.2	203.2	130.7	*176*	*92*
60–64	61.4	3.0	53.6	0.0	176.5	119.6	291.5	151.5	*168*	*204*
65–69	51.4	9.0	25.1	0.0	170.5	134.3	247.0	165.0	*169*	*260*
70–74	47.8	13.9	23.0	0.0	204.0	160.8	274.9	197.3	*158*	*239*
75–79	58.7	10.1	21.0	0.0	193.2	175.0	272.9	190.0	*161*	*247*
80+	38.8	11.8	7.9	0.0	165.8	130.0	212.5	156.1	*393*	*504*
Couples	**121.9**	**42.1**	**102.8**	**0.0**	**307.3**	**248.3**	**532.0**	**349.6**	***4,255***	***4,550***
55–59	102.8	27.1	187.1	0.0	301.9	222.8	591.8	341.6	*989*	*391*
60–64	130.3	45.1	81.8	0.0	315.0	250.5	527.2	379.7	*830*	*938*
65–69	143.2	59.6	94.3	0.0	315.3	250.5	552.8	382.6	*901*	*1142*
70–74	136.0	49.3	67.5	0.0	315.8	251.7	519.4	352.8	*675*	*929*
75–79	114.5	39.5	68.2	0.0	296.6	246.2	479.2	310.7	*446*	*618*
80+	89.4	39.2	56.5	0.0	284.9	240.0	430.9	290.8	*414*	*532*
All	**101.4**	**29.5**	**98.0**	**0.0**	**264.3**	**201.4**	**463.7**	**286.0**	***6,160***	***6,811***
55–59	89.7	16.5	230.4	0.0	266.8	199.0	586.8	283.0	*1,296*	*534*
60–64	113.6	31.6	75.1	0.0	274.3	228.0	463.0	312.5	*1,132*	*1,275*
65–69	122.1	45.0	87.4	0.0	279.4	223.5	488.9	331.7	*1,178*	*1,523*
70–74	114.5	37.5	56.2	0.0	281.9	230.0	452.7	302.9	*920*	*1,285*
75–79	94.8	30.1	50.8	0.0	254.5	201.0	400.1	266.2	*689*	*982*
80+	69.1	22.4	32.3	0.0	220.3	179.1	321.7	229.6	*946*	*1,212*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.9, AE.11–AE.13, AE.21 and AE.23. For related text, see E.13.

Table E4. Distribution of total net non-pension wealth, by age and family type: wave 8

	Mean *£'000*	**10th percentile** *£'000*	**25th percentile** *£'000*	**Median** *£'000*	**75th percentile** *£'000*	**90th percentile** *£'000*	***Wted N***	***Unwted N***
Single men	**434.8**	**0.0**	**4.3**	**157.3**	**369.9**	**629.4**	***680***	***715***
55–59	1062.2	0.0	0.4	103.0	333.6	663.3	*132*	*51*
60–64	280.1	–0.2	2.9	138.3	369.9	678.4	*133*	*133*
65–69	333.0	0.0	4.0	165.0	371.0	629.8	*108*	*121*
70–74	256.9	0.0	6.0	159.0	402.9	653.2	*86*	*117*
75–79	219.5	0.2	12.9	161.8	316.2	470.7	*82*	*117*
80+	305.4	7.2	31.7	205.0	386.7	612.7	*139*	*176*
Single women	**242.8**	**0.1**	**8.0**	**161.0**	**327.8**	**531.8**	***1,226***	***1,546***
55–59	203.2	–0.3	0.3	130.7	288.1	439.6	*176*	*92*
60–64	291.5	–0.1	0.7	151.5	345.6	579.2	*168*	*204*
65–69	247.0	0.0	3.1	165.0	342.3	558.9	*169*	*260*
70–74	274.9	0.2	13.5	197.3	356.3	637.8	*158*	*239*
75–79	272.9	1.0	24.4	190.0	358.0	553.8	*161*	*247*
80+	212.5	1.9	13.6	156.1	301.5	511.2	*393*	*504*
Couples	**532.0**	**62.6**	**187.1**	**349.6**	**596.1**	**1,040.4**	***4,255***	***4,550***
55–59	591.8	19.5	164.6	341.6	572.8	886.8	*989*	*391*
60–64	527.2	74.6	206.0	379.7	629.6	1,079.1	*830*	*938*
65–69	552.8	71.3	204.2	382.6	641.3	1,145.6	*901*	*1,142*
70–74	519.4	77.8	196.5	352.8	601.7	1,046.1	*675*	*929*
75–79	479.2	40.3	182.9	310.7	528.4	1,012.6	*446*	*618*
80+	430.9	50.1	166.0	290.8	517.1	873.1	*414*	*532*
All	**463.7**	**2.5**	**129.1**	**286.0**	**520.0**	**886.1**	***6,160***	***6,811***
55–59	586.8	0.1	116.7	283.0	528.1	873.0	*1,296*	*534*
60–64	463.0	2.0	144.0	312.5	564.0	1,006.3	*1,132*	*1,275*
65–69	488.9	3.8	159.8	331.7	572.0	1,028.4	*1,178*	*1,523*
70–74	452.7	5.0	153.6	302.9	540.0	899.2	*920*	*1,285*
75–79	400.1	4.4	130.9	266.2	460.0	876.0	*689*	*982*
80+	321.7	5.0	88.9	229.6	405.9	643.2	*946*	*1,212*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.9, AE.21 and AE.23. For related text, see E.13.

Table E5a. Private pension membership, by age and gender (workers and non-workers below the SPA): wave 8

	Member of a private pension scheme	Contributing to a private pension scheme	Receiving income from a private pension scheme	Retained rights in a private pension scheme	*Wted N*	*Unwted N*
Men (55–SPA)	**87%**	**52%**	**34%**	**39%**	***1,217***	***801***
55–59	89%	64%	23%	46%	*654*	*231*
60–65	83%	37%	46%	31%	*563*	*570*
Women (55–SPA)	**75%**	**43%**	**30%**	**28%**	***1,089***	***799***
55–59	76%	50%	19%	35%	*670*	*315*
60–SPA	73%	32%	46%	17%	*419*	*484*
All (55–SPA)	**81%**	**48%**	**32%**	**34%**	***2,306***	***1,600***
55–59	83%	57%	21%	40%	*1,324*	*546*
60–SPA	79%	35%	46%	25%	*981*	*1,054*

Note: The middle three columns of the table do not sum to the first column of numbers (or to 100%) because individuals can have multiple pension schemes at different stages of contribution, receiving income and retaining rights. The SPA for women varies according to date of birth (see AE.18).

For variable definitions, see AE.18 and AE.23. For related text, see E.14.

Table E5b. Private pension membership, by age and gender (workers below the SPA): wave 8

	Member of a private pension scheme	Contributing to a private pension scheme	Receiving income from a private pension scheme	Retained rights in a private pension scheme	*Wted N*	*Unwted N*
Men (55–SPA)	**91%**	**71%**	**26%**	**42%**	***873***	***522***
55–59	95%	80%	20%	47%	*521*	*180*
60–SPA	86%	57%	35%	35%	*352*	*342*
Women (55–SPA)	**83%**	**63%**	**21%**	**33%**	***709***	***474***
55–59	81%	64%	12%	39%	*499*	*232*
60–SPA	86%	62%	42%	19%	*210*	*242*
All (55–SPA)	**88%**	**67%**	**23%**	**38%**	***1,581***	***996***
55–59	88%	72%	16%	43%	*1,020*	*412*
60–64	86%	59%	38%	29%	*562*	*584*

Note: The middle three columns of the table do not sum to the first column of numbers (or to 100%) because individuals can have multiple pension schemes at different stages of contribution, receiving income and retaining rights. The SPA for women varies according to date of birth (see AE.18).

For variable definitions, see AE.18 and AE.23. For related text, see E.14.

Table E6. Mean equivalised weekly household spending (£), by age and family type: wave 8

	Food inside the home	Food outside the home	Clothing and footwear	Domestic fuel	Leisure	Transfers outside the home	*Wted N*	*Unwted N*
Single men	**44.76**	**9.70**	**8.87**	**16.93**	**11.86**	**33.74**	***630***	***669***
55–59	(46.60)	(14.56)	(13.21)	(16.28)	(10.60)	(11.60)	*122*	*49*
60–64	44.53	10.93	10.39	15.55	20.27	17.07	*122*	*120*
65–69	46.14	7.88	9.62	17.39	11.49	30.21	*106*	*119*
70–74	40.54	7.27	7.34	18.36	12.05	44.66	*81*	*111*
75–79	43.90	7.76	7.10	17.85	8.53	74.63	*75*	*111*
80+	45.28	8.02	4.53	17.06	7.00	42.97	*123*	*159*
Single women	**44.85**	**6.43**	**10.32**	**18.20**	**8.93**	**26.99**	***1,116***	***1,420***
55–59	41.78	7.02	12.41	16.13	12.73	7.41	*169*	*90*
60–64	44.11	6.25	11.35	16.55	12.45	35.92	*167*	*202*
65–69	46.34	7.94	13.47	18.77	11.21	14.76	*160*	*247*
70–74	48.04	6.85	11.30	19.62	12.06	46.25	*147*	*222*
75–79	46.42	6.91	8.42	20.43	5.80	35.95	*151*	*230*
80+	43.92	5.03	7.59	18.15	4.04	25.73	*323*	*429*
Couples	**51.75**	**11.48**	**14.44**	**16.24**	**13.94**	**33.11**	***4,136***	***4,413***
55–59	49.58	12.56	15.51	15.72	14.72	22.78	*987*	*391*
60–64	52.04	12.25	17.04	16.61	15.65	35.24	*807*	*912*
65–69	54.25	12.58	17.34	16.48	16.94	37.96	*881*	*1,118*
70–74	52.86	10.60	12.26	16.47	13.16	34.34	*653*	*903*
75–79	52.34	9.82	10.16	16.25	10.14	44.09	*426*	*589*
80+	48.40	7.91	8.03	15.89	7.03	29.73	*382*	*500*
All family types	**49.69**	**10.33**	**13.07**	**16.69**	**12.77**	**32.02**	***5,882***	***6,502***
55–59	48.27	12.02	14.88	15.83	14.06	19.69	*1,278*	*530*
60–64	50.00	11.19	15.43	16.48	15.68	33.32	*1,096*	*1,234*
65–69	52.40	11.50	16.09	16.89	15.64	34.01	*1,147*	*1,484*
70–74	50.92	9.67	11.65	17.17	12.87	37.28	*881*	*1,236*
75–79	50.00	8.91	9.40	17.40	8.95	45.74	*652*	*930*
80+	46.19	6.81	7.33	16.94	5.86	30.15	*828*	*1,088*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.7, AE.9 and AE.23. For related text, see E.15.

Table E7. Mean self-reported chances (%) of having insufficient resources to meet needs at some point in the future, by age, gender and income group: wave 8

	All	Total equivalised income group					*Wted*	*Unwted*
		Lowest	2nd	3rd	4th	Highest	*N*	*N*
Single men	**30.7**	**40.0**	**32.3**	**27.5**	**25.0**	**18.7**	***654***	***683***
55–59	43.4	60.4	53.0	33.7	37.7	17.8	*132*	*51*
60–64	34.5	37.4	34.1	29.2	41.9	27.2	*131*	*130*
65–69	30.2	44.7	26.4	34.9	18.9	22.0	*100*	*114*
70–74	25.7	24.3	36.3	29.1	13.6	16.0	*83*	*113*
75–79	26.5	26.1	23.7	35.6	25.0	18.0	*78*	*112*
80+	20.1	27.6	27.0	13.1	17.8	6.7	*129*	*163*
Single women	**33.2**	**36.6**	**34.0**	**30.2**	**29.1**	**26.4**	***1,165***	***1,482***
55–59	46.1	57.1	53.8	39.2	21.9	33.3	*169*	*90*
60–64	41.0	42.7	48.9	33.3	41.3	31.8	*163*	*198*
65–69	37.0	42.5	36.3	34.9	35.8	22.6	*166*	*255*
70–74	32.6	33.2	37.8	20.6	34.1	28.7	*155*	*235*
75–79	31.5	36.0	32.4	29.5	24.0	24.6	*155*	*239*
80+	22.8	25.3	19.4	23.0	22.7	18.2	*357*	*465*
Partnered men	**27.8**	**36.3**	**32.0**	**27.5**	**26.9**	**22.4**	***2,112***	***2,152***
55–59	34.6	50.5	55.5	34.3	29.5	28.5	*500*	*170*
60–64	26.9	34.6	31.2	26.2	28.7	19.3	*396*	*405*
65–69	26.7	30.6	30.8	28.2	30.2	18.7	*438*	*500*
70–74	26.0	36.0	30.1	26.8	22.0	21.3	*333*	*471*
75–79	24.1	30.1	23.4	26.9	22.3	16.9	*222*	*315*
80+	22.8	31.1	24.1	21.2	19.0	17.6	*223*	*291*
Partnered women	**31.2**	**36.3**	**34.2**	**31.2**	**31.0**	**25.8**	***1,900***	***2,137***
55–59	34.5	50.2	34.5	30.7	37.1	31.2	*449*	*205*
60–64	31.4	33.9	40.5	31.3	28.7	26.6	*388*	*486*
65–69	32.0	40.4	35.1	35.5	29.9	25.4	*418*	*586*
70–74	30.2	33.3	33.8	32.7	31.7	16.5	*307*	*412*
75–79	28.2	32.5	30.4	29.4	28.8	15.4	*189*	*257*
80+	23.9	30.1	27.8	20.1	18.0	20.8	*149*	*191*

For variable definitions, see AE.7–AE.9, AE.10 and AE.23. For related text, see E.16.

Table E8. Labour market participation, by age, gender and wealth group (only individuals aged 74 and below): wave 8

	% working part-time	% working full-time	% working full- or part-time	% working full- or part-time by wealth group Lowest	2nd	3rd	4th	Highest
Men (55–74)	**14.1**	**33.5**	**47.6**	**32.3**	**56.6**	**51.3**	**48.0**	**48.2**
55–59	13.1	66.3	79.4	(48.2)	91.5	-	(83.7)	(79.2)
60–64	14.8	45.5	60.3	40.0	71.0	69.9	62.5	59.6
65–69	18.4	8.4	26.7	18.4	24.1	27.4	30.2	29.2
70–74	9.3	3.5	12.8	8.3	10.3	15.6	9.1	19.0
Women (55–74)	**23.5**	**13.2**	**36.6**	**26.6**	**40.0**	**41.4**	**38.2**	**35.9**
55–59	41.8	30.8	72.6	44.1	82.6	86.2	79.0	69.8
60–64	28.5	15.6	44.1	39.2	45.3	45.7	47.0	43.0
65–69	13.5	2.8	16.2	10.9	19.6	15.5	14.7	19.4
70–74	6.0	0.4	6.4	0.9	1.1	8.1	9.2	10.6
All (55–74)	**18.9**	**23.1**	**42.0**	**29.3**	**48.0**	**45.8**	**43.2**	**42.3**
55–59	27.4	48.6	76.0	46.1	87.5	89.9	81.5	74.8
60–64	21.9	30.0	51.9	39.6	56.8	57.4	54.3	51.5
65–69	15.8	5.5	21.3	14.1	21.6	21.2	22.6	24.5
70–74	7.6	1.9	9.5	4.4	5.3	11.4	9.1	14.8

For variable definitions, see AE.22 and AE.23. For related text, see E.17.

Table E8N. Sample sizes for Table E8: wave 8

	Sample sizes by age and gender		Sample sizes by age, gender and wealth group									
			Weighted N					*Unweighted N*				
	Wted N	*Unwted N*	Lowest	2nd	3rd	4th	Highest	Lowest	2nd	3rd	4th	Highest
Men (55–74)	**2,150**	**2,000**	365	412	381	470	523	300	337	372	467	524
55–59	631	220	122	160	83	129	138	46	53	29	45	47
60–64	528	540	98	79	104	110	136	99	81	101	112	147
65–69	555	632	77	94	106	133	145	76	100	120	164	172
70–74	436	608	68	79	88	98	104	79	103	122	146	158
Women (55–74)	**2,267**	**2,527**	408	440	475	454	490	411	495	507	534	580
55–59	625	298	126	130	138	113	118	65	70	53	56	54
60–64	567	702	105	98	111	123	130	116	124	134	153	175
65–69	598	859	102	118	115	127	135	132	169	168	191	199
70–74	478	668	75	94	111	92	106	98	132	152	134	152
All (55–74)	**4,417**	**4,527**	773	851	856	924	1,013	711	832	879	1,001	1,104
55–59	1,256	518	248	290	222	241	255	111	123	82	101	101
60–64	1,095	1,242	203	177	215	233	267	215	205	235	265	322
65–69	1,152	1,491	179	212	221	260	280	208	269	288	355	371
70–74	914	1,276	143	173	199	189	211	177	235	274	280	310

Table E9. Mean self-reported chances (%) of working at future target ages, by age, gender and wealth: wave 8

	Target age	All	Wealth group				
			Lowest	2nd	3rd	4th	Highest
Men (55–64)							
55–59	*60*	67.3	(60.4)	81.9	–	(63.1)	(71.1)
60–64	*65*	38.7	33.1	46.4	50.7	42.0	39.7
Women (55–59)							
55–59	*60*	56.7	49.3	65.8	74.7	60.7	57.9

For variable definitions, see AE.8, AE.22 and AE23. For related text, see E.18.

Table E9N. Sample sizes for Table E9: wave 8

	Sample sizes by age and gender		Sample sizes by age, gender and wealth group									
			Weighted N					*Unweighted N*				
	Wted N	*Unwted N*	Lowest	2nd	3rd	4th	Highest	Lowest	2nd	3rd	4th	Highest
Men (55–64)												
55–59	625	220	110	161	81	133	139	43	54	28	47	48
60–64	527	537	94	79	105	110	139	94	80	102	112	149
Women (55–59)												
55–59	626	297	119	130	138	113	126	63	70	52	56	56

Table E10. Whether health limits kind or amount of work, by age, gender and wealth: wave 8

Age, gender and wealth group	No limiting health problem	Has limiting health problem	Has limiting health problem and ...			*Wted N*	*Unwted N*
			Not working	Working but health problem does not limit current job	Working and health problem does limit current job		
Men (55–59)	**80%**	**20%**	**11%**	**4%**	**5%**	***636***	***222***
Lowest	(57%)	(43%)	(34%)	(7%)	(3%)	*120*	*45*
2nd	77%	23%	7%	4%	12%	*161*	*54*
3rd	–	–	–	–	–	*81*	*28*
4th	(92%)	(8%)	(4%)	(0%)	(4%)	*133*	*47*
Highest	(88%)	(12%)	(6%)	(5%)	(0%)	*139*	*48*
Men (60–SPA)	**75%**	**25%**	**16%**	**3%**	**6%**	***532***	***541***
Lowest	42%	58%	45%	2%	12%	*99*	*98*
2nd	72%	28%	13%	4%	11%	*79*	*80*
3rd	83%	17%	9%	3%	6%	*105*	*102*
4th	79%	21%	11%	7%	2%	*110*	*112*
Highest	91%	9%	5%	2%	2%	*139*	*149*
All men (55–SPA)	**78%**	**22%**	**13%**	**4%**	**5%**	***1,168***	***763***
Lowest	50%	50%	39%	4%	7%	*219*	*143*
2nd	76%	24%	9%	4%	11%	*240*	*134*
3rd	86%	14%	6%	4%	5%	*187*	*130*
4th	86%	14%	7%	3%	3%	*243*	*159*
Highest	90%	10%	6%	4%	1%	*278*	*197*
Women (55–59)	**84%**	**16%**	**10%**	**3%**	**4%**	***628***	***298***
Lowest	67%	33%	29%	4%	0%	*119*	*63*
2nd	71%	29%	16%	5%	8%	*130*	*70*
3rd	92%	8%	4%	0%	5%	*140*	*53*
4th	91%	9%	1%	3%	5%	*113*	*56*
Highest	96%	4%	2%	1%	0%	*126*	*56*
Women (60–SPA)	**72%**	**28%**	**21%**	**4%**	**3%**	***399***	***463***
Lowest	54%	46%	35%	5%	6%	*79*	*82*
2nd	59%	41%	32%	4%	5%	*71*	*84*
3rd	77%	23%	18%	4%	2%	*79*	*88*
4th	84%	16%	9%	4%	3%	*85*	*99*
Highest	84%	16%	11%	3%	1%	*86*	*110*
All women (55–SPA)	**79%**	**21%**	**14%**	**3%**	**4%**	***1,027***	***761***
Lowest	62%	38%	31%	4%	2%	*198*	*145*
2nd	67%	33%	22%	4%	7%	*201*	*154*
3rd	86%	14%	9%	1%	4%	*219*	*141*
4th	88%	12%	4%	3%	4%	*197*	*155*
Highest	91%	9%	6%	2%	1%	*212*	*166*

For variable definitions, see AE.22 and AE.23. For related text, see E.19 and E.20.

Table E11. Mean self-reported chances (%) of health limiting ability to work at age 65 (workers aged below 65 only), by age, gender and wealth group: wave 8

	All	Wealth group				
		Lowest	2nd	3rd	4th	Highest
Men (55–64)	**34.3**	**36.2**	**41.6**	**33.9**	**30.7**	**29.3**
55–59	35.5	–	42.4	–	(32.1)	(32.2)
60–64	32.3	(38.6)	39.4	35.0	28.5	25.5
Women (55–64)	**30.8**	**35.0**	**34.8**	**32.7**	**25.8**	**26.6**
55–59	34.5	(36.9)	38.9	(36.0)	(26.8)	(33.4)
60–64	23.9	(32.7)	24.4	24.8	24.4	15.6

For variable definitions, see AE.8, AE.22 and AE.23. For related text, see E.21.

Table E11N. Sample sizes for Table E11: wave 8

	Sample sizes by age and gender		Sample sizes by age, gender and wealth group									
			Weighted N					*Unweighted N*				
	Wted N	*Unwted N*	Lowest	2nd	3rd	4th	Highest	Lowest	2nd	3rd	4th	Highest
Men (55–64)	**831**	**490**	97	203	154	181	195	57	107	97	104	125
55–59	509	174	59	148	80	112	111	20	50	27	39	38
60–64	321	316	39	55	74	69	85	37	57	70	65	87
Women (55–64)	**712**	**519**	99	151	167	149	147	78	111	102	116	112
55–59	459	216	56	107	117	89	91	33	55	44	44	40
60–64	252	303	43	43	50	60	56	45	56	58	72	72

Table EL1a. Mean equivalised weekly family TOTAL income (£), by baseline (wave 4) age and family type

Age and family type in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Single men	**329.41**	**337.28**	**340.58**	**343.56**	**333.70**	***541***	***493***
50–54	338.58	338.25	362.13	357.82	283.99	*83*	*72*
55–59	332.06	343.84	355.09	341.86	342.03	*124*	*96*
60–64	320.91	341.65	298.62	327.56	316.86	*105*	*103*
65–69	340.04	303.62	360.69	363.47	359.14	*79*	*81*
70–74	293.06	297.41	313.18	312.00	326.60	*68*	*77*
75–79	(359.26)	(383.74)	(361.44)	(391.98)	(366.85)	*42*	*37*
80+	–	–	–	–	–	*39*	*27*
Single women	**288.28**	**281.19**	**284.39**	**288.89**	**293.43**	***1,018***	***1,042***
50–54	305.87	319.16	338.80	355.23	356.33	*87*	*90*
55–59	330.05	294.26	299.55	306.21	327.23	*172*	*165*
60–64	327.58	332.44	314.38	303.46	309.19	*156*	*193*
65–69	291.90	272.81	289.57	295.20	288.55	*145*	*170*
70–74	260.87	267.34	270.64	276.38	283.31	*158*	*198*
75–79	267.58	258.62	256.54	257.37	263.51	*151*	*128*
80+	235.82	237.22	242.98	256.02	248.78	*150*	*98*
Partnered men	**432.54**	**439.95**	**438.98**	**423.41**	**426.07**	***2,015***	***1,959***
50–54	473.80	544.31	521.37	479.79	467.03	*251*	*210*
55–59	471.63	463.26	438.08	444.69	447.11	*552*	*431*
60–64	444.75	455.50	494.93	449.29	452.42	*451*	*499*
65–69	428.99	418.63	426.23	425.50	419.38	*299*	*339*
70–74	372.93	366.18	365.06	352.55	368.12	*239*	*293*
75–79	329.08	343.67	333.28	330.03	358.71	*151*	*135*
80+	342.40	334.96	333.13	331.71	320.64	*72*	*52*
Partnered women	**420.59**	**417.42**	**428.35**	**404.29**	**403.69**	***1,939***	***2,013***
50–54	463.13	484.06	459.00	434.38	411.91	*250*	*248*
55–59	461.50	470.26	472.73	462.48	462.27	*550*	*503*
60–64	449.59	417.88	469.41	416.42	419.04	*461*	*534*
65–69	387.76	378.40	392.37	369.31	366.55	*306*	*343*
70–74	333.71	343.30	339.02	330.07	320.20	*208*	*260*
75–79	312.07	302.88	298.71	283.96	337.94	*117*	*93*
80+	(298.03)	(311.45)	(310.57)	(312.67)	(300.85)	*46*	*32*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.4, AE.7, AE.9, AE.20 and AE.23. For related text, see E.23.

Table EL1b. Mean equivalised weekly family EARNINGS (£), by baseline (wave 4) age and family type

Age and family type in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Single men	**132.85**	**120.24**	**95.89**	**79.61**	**58.38**	***541***	***493***
50–54	259.78	236.54	236.75	211.08	145.04	*83*	*72*
55–59	228.11	216.24	195.10	151.78	105.87	*124*	*96*
60–64	180.94	146.99	51.68	28.68	26.65	*105*	*103*
65–69	24.56	21.91	23.24	42.39	45.30	*79*	*81*
70–74	6.96	4.27	4.59	8.63	0.00	*68*	*77*
75–79	(8.85)	(11.30)	(10.33)	(0.20)	(0.23)	*42*	*37*
80+	–	–	–	–	–	*39*	*27*
Single women	**71.28**	**57.79**	**48.19**	**37.57**	**32.40**	***1,018***	***1,042***
50–54	214.66	221.96	246.12	216.45	193.60	*87*	*90*
55–59	194.19	147.95	108.29	74.11	64.43	*172*	*165*
60–64	98.12	71.63	46.49	33.52	27.90	*156*	*193*
65–69	27.40	19.45	12.07	13.12	7.27	*145*	*170*
70–74	4.20	2.58	3.41	0.45	0.96	*158*	*198*
75–79	1.18	0.93	0.07	0.00	0.00	*151*	*128*
80+	3.59	–0.11	0.12	0.55	0.00	*150*	*98*
Partnered men	**217.63**	**201.61**	**154.48**	**130.64**	**100.26**	***2,015***	***1,959***
50–54	403.30	447.62	386.51	363.15	313.32	*251*	*210*
55–59	352.68	322.89	253.24	222.65	140.03	*552*	*431*
60–64	236.34	198.04	116.96	81.45	72.01	*451*	*499*
65–69	83.30	65.76	52.19	35.19	34.90	*299*	*339*
70–74	34.67	22.37	19.93	8.91	11.64	*239*	*293*
75–79	17.55	6.97	7.90	4.64	7.34	*151*	*135*
80+	3.31	1.53	2.18	2.06	–3.73	*72*	*52*
Partnered women	**194.10**	**168.47**	**130.05**	**99.64**	**74.08**	***1,939***	***2,013***
50–54	370.39	377.48	319.94	285.79	213.28	*250*	*248*
55–59	327.54	294.00	211.23	157.32	108.17	*550*	*503*
60–64	175.88	120.77	93.40	57.76	52.01	*461*	*534*
65–69	54.33	37.20	34.12	23.60	18.09	*306*	*343*
70–74	26.52	16.19	14.60	9.06	6.45	*208*	*260*
75–79	2.27	2.13	0.81	0.71	4.57	*117*	*93*
80+	(2.37)	(0.98)	(0.00)	(0.00)	(0.00)	*46*	*32*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.3, AE.6, AE.7, AE.9, AE.16 and AE.23.

For related text, see E.23.

Table EL1c. Mean equivalised weekly family PRIVATE PENSION income (£), by baseline (wave 4) age and family type

Age and family type in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Single men	**79.01**	**84.70**	**96.94**	**106.98**	**100.47**	***541***	***493***
50–54	20.34	30.98	31.69	42.74	53.02	*83*	*72*
55–59	31.55	56.99	75.83	100.89	95.93	*124*	*96*
60–64	73.95	83.00	95.54	109.30	100.29	*105*	*103*
65–69	112.78	100.34	128.70	124.13	103.63	*79*	*81*
70–74	116.98	109.13	117.14	109.79	110.45	*68*	*77*
75–79	(155.50)	(136.53)	(158.03)	(176.52)	(145.54)	*42*	*37*
80+	–	–	–	–	–	*39*	*27*
Single women	**53.58**	**62.23**	**66.28**	**76.27**	**80.96**	***1,018***	***1,042***
50–54	16.84	12.15	22.75	54.71	79.82	*87*	*90*
55–59	24.30	39.30	58.69	78.22	88.13	*172*	*165*
60–64	62.79	86.29	80.67	83.15	95.74	*156*	*193*
65–69	70.61	78.19	80.78	89.39	89.54	*145*	*170*
70–74	65.28	69.81	75.84	78.94	81.00	*158*	*198*
75–79	69.31	70.25	67.52	72.04	69.53	*151*	*128*
80+	54.16	60.51	59.33	67.95	61.39	*150*	*98*
Partnered men	**96.16**	**110.90**	**125.43**	**134.90**	**147.73**	***2,015***	***1,959***
50–54	22.91	33.56	58.80	61.91	94.23	*251*	*210*
55–59	53.55	78.24	108.45	126.60	148.75	*552*	*431*
60–64	114.81	137.61	151.04	165.13	171.03	*451*	*499*
65–69	150.12	151.86	155.15	166.50	164.60	*299*	*339*
70–74	146.95	140.50	142.50	141.28	158.56	*239*	*293*
75–79	113.77	140.29	132.86	134.83	133.29	*151*	*135*
80+	131.77	136.27	132.20	110.86	103.77	*72*	*52*
Partnered women	**98.59**	**108.69**	**120.16**	**130.57**	**138.71**	***1,939***	***2,013***
50–54	33.47	40.64	60.57	77.74	104.35	*250*	*248*
55–59	70.28	91.88	125.19	142.44	153.37	*550*	*503*
60–64	123.75	136.62	139.45	157.75	157.56	*461*	*534*
65–69	141.90	135.79	130.77	138.23	145.37	*306*	*343*
70–74	125.20	127.59	132.39	118.63	120.85	*208*	*260*
75–79	106.77	111.77	99.95	91.83	99.56	*117*	*93*
80+	(108.80)	(126.70)	(114.02)	(108.83)	(97.82)	*46*	*32*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.3, AE.5, AE.9, AE.15 and AE.23. For related text, see E.23.

Table EL1d. Mean equivalised weekly family STATE PENSION AND BENEFIT income (£), by baseline (wave 4) age and family type

Age and family type in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Single men	**87.74**	**107.70**	**119.30**	**130.36**	**148.52**	***541***	***493***
50–54	44.10	53.82	62.35	57.10	60.81	*83*	*72*
55–59	41.72	49.80	42.16	65.51	111.95	*124*	*96*
60–64	45.35	90.43	132.66	164.83	170.93	*105*	*103*
65–69	144.78	156.13	166.27	167.47	179.47	*79*	*81*
70–74	145.30	165.52	174.80	180.48	191.40	*68*	*77*
75–79	(151.38)	(168.35)	(174.14)	(183.37)	(190.80)	*42*	*37*
80+	–	–	–	–	–	*39*	*27*
Single women	**133.09**	**141.82**	**148.87**	**156.19**	**159.74**	***1,018***	***1,042***
50–54	58.99	65.69	58.17	62.35	56.72	*87*	*90*
55–59	63.43	85.95	104.79	126.03	141.65	*172*	*165*
60–64	136.57	153.55	156.39	160.40	167.14	*156*	*193*
65–69	158.03	162.18	163.06	175.52	173.75	*145*	*170*
70–74	153.41	166.95	172.18	179.68	181.01	*158*	*198*
75–79	181.09	177.20	180.62	173.41	178.35	*151*	*128*
80+	158.13	154.82	172.43	177.92	176.01	*150*	*98*
Partnered men	**74.51**	**90.15**	**107.22**	**121.94**	**141.67**	***2,015***	***1,959***
50–54	18.72	25.91	22.31	25.51	29.03	*251*	*210*
55–59	24.34	30.95	41.04	58.30	109.96	*552*	*431*
60–64	44.84	87.10	130.38	159.39	170.84	*451*	*499*
65–69	140.13	150.47	169.27	180.13	185.73	*299*	*339*
70–74	147.97	162.99	168.26	177.30	179.36	*239*	*293*
75–79	153.25	157.30	169.31	172.97	185.05	*151*	*135*
80+	157.86	154.95	170.74	174.58	191.97	*72*	*52*
Partnered women	**83.53**	**103.13**	**123.18**	**137.38**	**156.10**	***1,939***	***2,013***
50–54	27.06	33.73	36.35	39.61	51.33	*250*	*248*
55–59	26.80	55.51	82.34	114.15	158.62	*550*	*503*
60–64	93.33	120.81	150.89	166.36	174.38	*461*	*534*
65–69	134.82	148.53	167.27	169.88	177.71	*306*	*343*
70–74	148.48	163.60	168.21	174.09	174.89	*208*	*260*
75–79	153.55	157.70	170.93	169.55	192.13	*117*	*93*
80+	(156.14)	(154.40)	(174.46)	(186.80)	(187.89)	*46*	*32*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.3, AE.7, AE.9, AE.17, AE.19 and AE.23.

For related text, see E.23.

Table EL1e. Mean equivalised weekly family ASSET AND OTHER income (£), by baseline (wave 4) age and family type

Age and family type in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Single men	**29.81**	**24.64**	**28.30**	**26.60**	**26.34**	***541***	***493***
50–54	14.36	16.90	31.34	46.90	25.13	*83*	*72*
55–59	30.68	20.81	40.44	23.68	28.29	*124*	*96*
60–64	20.67	21.23	18.73	24.75	18.98	*105*	*103*
65–69	57.91	25.24	42.47	29.47	30.75	*79*	*81*
70–74	23.81	18.50	16.66	13.10	24.76	*68*	*77*
75–79	(43.54)	(67.56)	(18.94)	(31.90)	(30.28)	*42*	*37*
80+	–	–	–	–	–	*39*	*27*
Single women	**30.33**	**19.36**	**21.06**	**18.87**	**20.30**	***1,018***	***1,042***
50–54	15.38	19.35	11.75	21.73	26.19	*87*	*90*
55–59	48.13	21.06	27.79	27.85	33.03	*172*	*165*
60–64	30.10	20.97	30.84	26.39	18.41	*156*	*193*
65–69	35.86	12.99	33.65	17.17	18.00	*145*	*170*
70–74	37.98	28.00	19.21	17.31	20.34	*158*	*198*
75–79	16.00	10.24	8.34	11.93	15.63	*151*	*128*
80+	19.93	22.01	11.11	9.59	11.37	*150*	*98*
Partnered men	**44.23**	**37.62**	**52.34**	**35.93**	**36.25**	***2,015***	***1,959***
50–54	28.87	37.39	53.74	29.21	29.47	*251*	*210*
55–59	41.06	31.96	36.03	36.79	48.37	*552*	*431*
60–64	48.76	32.66	96.76	44.26	38.23	*451*	*499*
65–69	55.44	51.64	49.61	43.58	34.14	*299*	*339*
70–74	43.34	40.42	34.36	25.05	18.52	*239*	*293*
75–79	44.52	39.12	23.20	17.59	33.02	*151*	*135*
80+	49.46	42.22	28.02	44.22	28.63	*72*	*52*
Partnered women	**44.37**	**37.61**	**55.49**	**36.85**	**34.58**	***1,939***	***2,013***
50–54	32.20	33.09	42.23	31.23	42.96	*250*	*248*
55–59	36.88	29.95	54.55	49.33	42.11	*550*	*503*
60–64	56.64	39.18	85.90	34.34	34.94	*461*	*534*
65–69	56.72	57.36	60.08	37.55	25.20	*306*	*343*
70–74	33.51	35.93	23.82	28.29	17.97	*208*	*260*
75–79	49.48	31.27	27.01	21.88	41.67	*117*	*93*
80+	(30.71)	(29.38)	(22.10)	(17.04)	(15.14)	*46*	*32*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.1, AE.3, AE.7, AE.9, AE.14 and AE.23.

For related text, see E.23.

Table EL2a. Mean equivalised weekly family TOTAL income (£), by baseline (wave 4) age and education

Age in 2008–09 and education	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Aged 50–54	**431.76**	**468.91**	**455.74**	**429.16**	**409.43**	***664***	***615***
Low education	326.97	344.50	336.52	347.33	315.13	*197*	*158*
Medium education	442.63	440.36	453.24	427.56	399.27	*324*	*303*
High education	551.23	705.94	625.80	547.60	564.66	*143*	*154*
Aged 55–59	**439.52**	**436.16**	**428.33**	**425.90**	**430.85**	***1,368***	***1,176***
Low education	317.48	329.75	323.73	325.13	325.38	*496*	*365*
Medium education	447.38	429.95	435.17	427.55	442.40	*533*	*476*
High education	605.32	600.76	572.27	572.38	567.86	*340*	*335*
Aged 60–64	**420.52**	**414.51**	**444.22**	**405.13**	**408.87**	***1,164***	***1,319***
Low education	347.32	341.53	350.74	322.01	326.50	*543*	*541*
Medium education	438.00	443.76	473.48	427.28	428.61	*439*	*530*
High education	596.84	562.74	654.74	599.90	608.04	*182*	*248*
Aged 65–69	**381.84**	**367.05**	**383.66**	**376.54**	**367.24**	***824***	***929***
Low education	298.73	281.62	288.68	293.28	288.91	*419*	*414*
Medium education	400.67	389.28	418.13	407.46	385.73	*284*	*347*
High education	625.89	607.75	634.89	594.87	595.93	*121*	*168*
Aged 70–74	**327.11**	**327.61**	**330.70**	**323.76**	**325.52**	***660***	***814***
Low education	277.78	282.63	291.52	273.88	278.74	*378*	*413*
Medium education	364.68	365.72	356.23	364.91	365.96	*212*	*287*
High education	478.28	456.08	465.24	467.00	456.84	*70*	*114*
Aged 75+	**297.79**	**302.82**	**297.16**	**297.77**	**310.64**	***758***	***595***
Low education	268.10	274.75	270.00	272.75	275.18	*448*	*312*
Medium education	315.08	322.55	315.51	303.31	325.89	*260*	*227*
High education	472.66	450.27	444.06	491.91	546.94	*50*	*56*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.3, AE.5, AE.7, AE.9, AE.20 and AE.23.

For related text, see E.24.

Table EL2b. Mean equivalised weekly family EARNINGS (£), by baseline (wave 4) age and education

Age in 2008–09 and education	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Aged 50–54	**348.79**	**367.45**	**325.64**	**293.40**	**238.30**	***664***	***615***
Low education	266.84	269.41	257.97	243.25	205.87	*197*	*158*
Medium education	364.05	347.74	310.44	283.10	230.89	*324*	*303*
High education	426.89	545.84	454.42	387.52	300.36	*143*	*154*
Aged 55–59	**313.22**	**281.24**	**214.99**	**172.52**	**115.39**	***1,368***	***1,176***
Low education	222.94	204.98	170.19	137.19	89.18	*496*	*365*
Medium education	309.73	277.85	205.81	163.55	113.39	*533*	*476*
High education	450.49	398.15	295.37	238.98	157.08	*340*	*335*
Aged 60–64	**188.78**	**145.83**	**92.23**	**59.27**	**54.04**	***1,164***	***1,319***
Low education	162.74	129.89	75.05	47.79	44.41	*543*	*541*
Medium education	182.66	147.04	98.36	59.49	52.75	*439*	*530*
High education	281.23	190.93	128.95	92.92	86.18	*182*	*248*
Aged 65–69	**57.60**	**43.14**	**35.92**	**27.89**	**25.02**	***824***	***929***
Low education	48.35	30.24	24.80	17.59	8.51	*419*	*414*
Medium education	62.97	43.74	32.09	27.25	17.52	*284*	*347*
High education	77.05	86.22	83.52	65.51	100.59	*121*	*168*
Aged 70–74	**22.24**	**14.01**	**12.99**	**6.99**	**6.36**	***660***	***814***
Low education	17.19	11.95	11.70	5.21	4.22	*378*	*413*
Medium education	24.78	16.38	14.11	9.17	8.66	*212*	*287*
High education	41.61	18.00	16.56	9.92	11.04	*70*	*114*
Aged 75+	**6.04**	**4.09**	**2.56**	**1.35**	**1.83**	***758***	***595***
Low education	2.82	5.19	2.79	1.35	1.27	*448*	*312*
Medium education	11.88	2.68	2.34	1.18	0.78	*260*	*227*
High education	4.51	1.49	1.65	2.28	12.20	*50*	*56*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.3, AE.5–AE.7, AE.9, AE.16 and AE.23.

For related text, see E.24.

Table EL2c. Mean equivalised weekly family PRIVATE PENSION income (£), by baseline (wave 4) age and education

Age in 2008–09 and education	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Aged 50–54	**25.95**	**33.43**	**51.94**	**65.08**	**91.81**	***664***	***615***
Low education	8.31	13.17	18.71	33.96	34.25	*197*	*158*
Medium education	27.77	37.64	63.73	72.47	97.23	*324*	*303*
High education	46.09	51.60	71.09	91.65	159.44	*143*	*154*
Aged 55–59	**55.04**	**77.73**	**106.93**	**125.32**	**139.88**	***1,368***	***1,176***
Low education	32.53	46.16	57.82	72.83	74.69	*496*	*365*
Medium education	61.24	75.94	105.31	118.69	138.21	*533*	*476*
High education	78.15	126.48	182.17	213.41	238.40	*340*	*335*
Aged 60–64	**108.35**	**125.99**	**132.66**	**146.81**	**150.10**	***1,164***	***1,319***
Low education	63.80	74.88	77.94	83.78	87.75	*543*	*541*
Medium education	131.40	150.78	157.98	169.45	170.02	*439*	*530*
High education	185.75	219.39	236.20	280.59	288.76	*182*	*248*
Aged 65–69	**129.58**	**127.51**	**130.46**	**138.64**	**133.93**	***824***	***929***
Low education	82.64	75.48	76.69	81.40	79.84	*419*	*414*
Medium education	146.09	149.08	152.49	162.83	152.58	*284*	*347*
High education	253.63	255.38	266.75	281.88	277.95	*121*	*168*
Aged 70–74	**118.33**	**116.37**	**122.30**	**117.09**	**120.04**	***660***	***814***
Low education	82.74	77.36	86.88	79.22	81.57	*378*	*413*
Medium education	144.85	142.54	145.67	146.43	152.93	*212*	*287*
High education	229.16	248.45	243.10	231.60	229.08	*70*	*114*
Aged 75+	**98.75**	**106.86**	**101.74**	**102.46**	**98.17**	***758***	***595***
Low education	72.39	78.83	76.09	73.47	72.16	*448*	*312*
Medium education	116.03	130.59	115.80	116.56	114.48	*260*	*227*
High education	244.09	233.52	257.46	287.64	245.12	*50*	*56*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.3, AE.5, AE.7, AE.9, AE.15 and AE.23.

For related text, see E.24.

Table EL2d. Mean equivalised weekly family STATE PENSION AND BENEFIT income (£), by baseline (wave 4) age and education

Age in 2002–03 and education	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Aged 50–54	**30.48**	**37.69**	**37.39**	**39.79**	**45.23**	***664***	***615***
Low education	45.81	56.89	55.44	61.63	64.73	*197*	*158*
Medium education	26.58	35.52	33.62	33.66	40.48	*324*	*303*
High education	18.26	16.24	21.02	23.31	29.16	*143*	*154*
Aged 55–59	**31.46**	**48.74**	**63.97**	**88.12**	**132.43**	***1,368***	***1,176***
Low education	46.37	66.25	81.98	102.30	147.61	*496*	*365*
Medium education	27.53	45.08	61.61	90.21	133.61	*533*	*476*
High education	15.88	28.95	41.03	63.85	108.24	*340*	*335*
Aged 60–64	**76.34**	**109.68**	**142.34**	**163.07**	**172.03**	***1,164***	***1,319***
Low education	86.46	115.63	147.25	169.10	177.64	*543*	*541*
Medium education	74.14	110.40	141.37	160.28	168.35	*439*	*530*
High education	51.48	90.07	129.92	151.76	164.18	*182*	*248*
Aged 65–69	**141.80**	**152.37**	**167.00**	**174.34**	**180.33**	***824***	***929***
Low education	145.75	155.21	169.86	178.14	183.72	*419*	*414*
Medium education	138.54	150.42	167.19	173.70	179.94	*284*	*347*
High education	135.76	147.20	156.50	162.57	169.45	*121*	*168*
Aged 70–74	**148.91**	**162.86**	**169.37**	**176.30**	**179.33**	***660***	***814***
Low education	150.27	165.07	171.73	177.29	181.92	*378*	*413*
Medium education	149.59	163.99	168.85	179.51	178.49	*212*	*287*
High education	139.62	147.48	158.11	161.32	167.83	*70*	*114*
Aged 75+	**159.45**	**162.03**	**174.62**	**175.27**	**185.28**	***758***	***595***
Low education	166.96	166.92	177.65	181.80	185.19	*448*	*312*
Medium education	151.50	157.88	173.96	168.02	188.43	*260*	*227*
High education	133.74	139.96	151.09	154.52	169.83	*50*	*56*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.3, AE.5, AE.7, AE.9, AE.17, AE.19 and AE.23.

For related text, see E.24.

Table EL2e. Mean equivalised weekly family ASSET AND OTHER income (£), by baseline (wave 4) age and education

Age in 2008–09 and education	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Aged 50–54	**26.53**	**30.84**	**40.77**	**30.89**	**33.83**	***664***	***615***
Low education	6.00	5.03	5.20	8.49	10.29	*197*	*158*
Medium education	24.23	19.45	45.45	38.33	30.67	*324*	*303*
High education	60.00	92.62	79.26	45.11	74.05	*143*	*154*
Aged 55–59	**39.80**	**29.29**	**42.93**	**40.11**	**43.15**	***1368***	***1176***
Low education	15.65	13.03	14.46	12.82	13.90	*496*	*365*
Medium education	48.87	33.00	62.13	55.60	57.19	*533*	*476*
High education	60.81	47.17	54.64	56.14	64.14	*340*	*335*
Aged 60–64	**47.05**	**32.74**	**77.17**	**36.30**	**32.54**	***1164***	***1319***
Low education	34.32	21.00	50.51	21.34	16.54	*543*	*541*
Medium education	49.81	35.07	76.14	38.90	37.33	*439*	*530*
High education	78.37	62.36	159.80	74.63	68.93	*182*	*248*
Aged 65–69	**52.86**	**44.64**	**50.23**	**35.61**	**27.86**	***824***	***929***
Low education	21.99	21.59	17.33	16.12	16.80	*419*	*414*
Medium education	53.07	46.61	66.36	43.61	35.65	*284*	*347*
High education	159.46	118.95	127.34	84.90	47.93	*121*	*168*
Aged 70–74	**37.63**	**34.43**	**26.04**	**23.38**	**19.77**	***660***	***814***
Low education	27.59	28.25	21.21	12.15	11.01	*378*	*413*
Medium education	45.46	42.96	27.60	29.80	25.83	*212*	*287*
High education	67.89	42.15	47.46	64.16	48.88	*70*	*114*
Aged 75+	**33.55**	**29.84**	**18.24**	**18.70**	**25.36**	***758***	***595***
Low education	25.94	23.81	13.48	16.13	16.57	*448*	*312*
Medium education	35.67	31.39	23.41	17.55	22.20	*260*	*227*
High education	90.32	75.29	33.86	47.47	119.78	*50*	*56*

Note: All values are expressed in January 2017 prices.

For variable definitions, see AE.1, AE.3, AE.5, AE.7, AE.9, AE.14 and AE.23.

For related text, see E.24.

Table EL3. Interquartile ratio (p75/p25) of total equivalised net family income, by baseline (wave 4) age and family type

Age and family type in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Single men	**2.56**	**2.27**	**2.21**	**2.09**	**2.14**	***541***	***493***
50–54	3.57	4.69	3.09	2.50	3.07	*83*	*72*
55–59	4.22	3.02	3.29	3.05	2.79	*124*	*96*
60–64	2.95	2.38	2.10	1.94	1.89	*105*	*103*
65–69	2.04	1.67	1.72	1.97	1.79	*79*	*81*
70–74	2.16	1.79	2.09	1.92	2.20	*68*	*77*
75–79	(2.07)	(1.82)	(1.81)	(1.73)	(1.67)	*42*	*37*
80+	–	–	–	–	–	*39*	*27*
Single women	**2.12**	**2.08**	**2.00**	**2.01**	**1.98**	***1,018***	***1,042***
50–54	2.49	3.03	2.23	2.73	2.95	*87*	*90*
55–59	2.49	2.37	2.16	2.17	2.26	*172*	*165*
60–64	2.37	2.07	2.09	2.11	2.16	*156*	*193*
65–69	2.11	2.07	2.05	1.94	1.98	*145*	*170*
70–74	1.89	1.84	1.88	1.83	1.76	*158*	*198*
75–79	1.83	1.96	1.84	1.92	1.85	*151*	*128*
80+	1.85	1.84	1.91	1.86	1.72	*150*	*98*
Partnered men	**2.12**	**2.18**	**2.02**	**2.01**	**1.97**	***2,015***	***1,959***
50–54	2.00	1.95	2.02	2.23	2.05	*251*	*210*
55–59	1.98	2.16	1.91	2.02	2.03	*552*	*431*
60–64	2.09	2.21	2.05	1.93	1.88	*451*	*499*
65–69	2.02	2.02	1.99	1.94	1.82	*299*	*339*
70–74	2.09	1.90	1.88	1.85	1.88	*239*	*293*
75–79	1.79	1.75	1.71	1.82	1.81	*151*	*135*
80+	2.13	1.92	1.79	2.17	1.73	*72*	*52*
Partnered women	**2.17**	**2.18**	**2.10**	**2.01**	**1.92**	***1,939***	***2,013***
50–54	2.14	2.14	2.10	2.06	2.06	*250*	*248*
55–59	2.01	2.31	2.12	2.10	1.84	*550*	*503*
60–64	2.10	2.14	2.05	1.92	1.93	*461*	*534*
65–69	2.04	1.96	1.95	1.86	1.80	*306*	*343*
70–74	1.96	1.81	1.80	1.84	1.74	*208*	*260*
75–79	1.96	1.91	1.71	1.69	1.84	*117*	*93*
80+	(1.79)	(1.62)	(1.56)	(1.46)	(1.67)	*46*	*32*
All family types	**2.29**	**2.20**	**2.12**	**2.07**	**1.97**	***5,513***	***5,507***
50–54	2.33	2.26	2.33	2.29	2.19	*671*	*620*
55–59	2.26	2.42	2.23	2.21	2.06	*1,398*	*1,195*
60–64	2.29	2.20	2.11	1.96	1.92	*1,173*	*1,329*
65–69	2.06	2.01	1.95	1.88	1.85	*829*	*933*
70–74	2.07	1.88	1.90	1.86	1.93	*674*	*828*
75–79	1.91	1.86	1.83	1.82	1.88	*462*	*393*
80+	1.87	1.93	1.83	1.90	1.75	*307*	*209*

For variable definitions, see AE.3, AE.7, AE.9, AE.20 and AE.23. For related text, see E.25.

Table EL4a. Persistency of making pension contributions in waves when observed to be below SPA, by age, gender and wealth group: aged below SPA and employed or self-employed at baseline only

Age and wealth group in 2008–09	Contributes to a pension ... Never (%)	Sometimes (%)	Always (%)	*Wted N*	*Unwted N*
All men (50–64)	**29.7**	**39.4**	**30.9**	***1,136***	***1,025***
Lowest	46.2	31.4	22.4	*137*	*104*
2nd	27.8	42.7	29.4	*220*	*181*
3rd	26.9	36.1	37.0	*249*	*218*
4th	26.2	40.8	33.0	*249*	*241*
Highest	28.8	42.3	28.9	*281*	*281*
Men (50–54)	**16.4**	**50.5**	**33.1**	***283***	***242***
Lowest	–	–	–	*36*	*27*
2nd	18.2	50.5	31.3	*65*	*55*
3rd	15.3	50.5	34.2	*66*	*51*
4th	(13.3)	(42.4)	(44.3)	*56*	*48*
Highest	9.7	56.4	33.9	*61*	*61*
Men (55–59)	**26.1**	**50.4**	**23.5**	***521***	***415***
Lowest	(43.1)	(37.2)	(19.7)	*59*	*38*
2nd	25.9	51.0	23.1	*114*	*82*
3rd	26.5	45.3	28.2	*99*	*76*
4th	20.9	55.4	23.7	*113*	*99*
Highest	23.0	55.1	21.8	*136*	*120*
Men (60–64)	**46.8**	**12.6**	**40.6**	***332***	***368***
Lowest	(63.4)	(4.9)	(31.7)	*42*	*39*
2nd	(48.4)	(7.7)	(43.9)	*41*	*44*
3rd	36.4	14.2	49.4	*85*	*91*
4th	42.8	18.9	38.4	*80*	*94*
Highest	51.9	11.4	36.7	*84*	*100*
All women (50–59)	**30.9**	**31.4**	**37.7**	***732***	***721***
Lowest	38.3	19.2	42.6	*75*	*68*
2nd	32.4	33.3	34.3	*175*	*165*
3rd	30.9	27.9	41.2	*145*	*139*
4th	25.1	37.5	37.5	*170*	*172*
Highest	31.9	32.0	36.2	*167*	*177*
Women (50–54)	**24.6**	**45.6**	**29.8**	***252***	***259***
Lowest	–	–	–	*26*	*25*
2nd	22.5	45.3	32.2	*62*	*61*
3rd	22.3	45.3	32.4	*58*	*54*
4th	22.3	50.7	27.1	*50*	*56*
Highest	30.6	46.4	22.9	*56*	*63*
Women (55–59)	**34.2**	**24.0**	**41.8**	***480***	***462***
Lowest	(44.5)	(10.7)	(44.8)	*49*	*43*
2nd	37.7	26.8	35.5	*114*	*104*
3rd	36.8	16.2	47.1	*87*	*85*
4th	26.3	31.9	41.9	*119*	*116*
Highest	32.5	24.8	42.8	*112*	*114*

For variable definitions, see AE.3, AE.18, AE.22 and AE.23. For related text, see E.26 and E.27.

Table EL4b. Persistency of making pension contributions in waves when observed to be below SPA, by age, gender and wealth group: employed or self-employed in all waves observed below SPA

Age and wealth group in 2008–09	Contributes to a pension ... Never (%)	Sometimes (%)	Always (%)	*Wted N*	*Unwted N*
All (50–64)	**30.5**	**24.1**	**45.4**	***1,332***	***1,244***
Lowest	40.1	18.9	41.0	*153*	*128*
2nd	28.8	29.4	41.8	*288*	*255*
3rd	28.5	21.8	49.7	*299*	*268*
4th	27.4	22.6	49.9	*282*	*277*
Highest	32.1	25.3	42.6	*310*	*316*
Men (50–64)	**29.8**	**27.9**	**42.2**	***790***	***721***
Lowest	44.7	22.0	33.3	*92*	*73*
2nd	26.1	34.6	39.3	*158*	*132*
3rd	26.5	26.9	46.6	*191*	*168*
4th	28.4	23.9	47.8	*164*	*160*
Highest	30.4	29.8	39.8	*186*	*188*
Women (50–59)	**31.5**	**18.6**	**49.9**	***542***	***523***
Lowest	33.2	14.2	52.5	*61*	*55*
2nd	32.1	23.1	44.8	*130*	*123*
3rd	32.1	12.9	55.0	*109*	*100*
4th	26.1	21.0	52.9	*118*	*117*
Highest	34.8	18.6	46.7	*124*	*128*

For variable definitions, see AE.18, AE.22 and AE.23. For related text, see E.28.

Table EL5. Persistence of self-reported financial difficulties and persistence of managing very well financially, by age and family type

Age and family type in 2008–09	Reports having financial difficulty ...			Reports managing very well ...			*Wted N*	*Unwted N*
	Never (%)	Sometimes (%)	Always (%)	Always (%)	Sometimes (%)	Never (%)		
Single men	**81.7**	**17.6**	**0.7**	**12.3**	**50.4**	**37.3**	***544***	***496***
50–54	60.8	37.4	1.8	6.4	42.9	50.7	*84*	*73*
55–59	79.8	19.2	1.0	9.5	48.4	42.0	*124*	*96*
60–64	80.5	18.7	0.8	9.8	51.6	38.6	*106*	*104*
65–69	84.9	15.1	0.0	13.9	52.1	34.0	*79*	*82*
70–74	92.2	7.8	0.0	17.5	47.3	35.3	*68*	*77*
75–79	(95.2)	(4.8)	(0.0)	(22.4)	(63.4)	(14.2)	*42*	*37*
80+	–	–	–	–	–	–	*39*	*27*
Single women	**84.8**	**14.5**	**0.7**	**10.7**	**50.9**	**38.4**	***1,020***	***1,044***
50–54	69.7	27.7	2.6	4.1	45.4	50.5	*87*	*90*
55–59	66.3	31.7	2.0	7.6	41.0	51.4	*172*	*165*
60–64	83.4	15.8	0.8	14.3	44.4	41.3	*156*	*194*
65–69	88.6	11.4	0.0	13.3	48.1	38.6	*146*	*171*
70–74	90.9	9.1	0.0	11.1	49.8	39.1	*158*	*198*
75–79	94.1	5.9	0.0	11.1	59.9	28.9	*151*	*128*
80+	96.6	3.4	0.0	10.8	66.8	22.4	*150*	*98*
Couples	**91.5**	**8.4**	**0.0**	**17.0**	**52.9**	**30.0**	***4,060***	***4,083***
50–54	85.7	14.3	0.0	14.9	50.5	34.5	*523*	*478*
55–59	90.0	9.9	0.1	19.6	50.6	29.8	*1,127*	*956*
60–64	92.3	7.7	0.0	19.6	53.0	27.4	*946*	*1,072*
65–69	93.8	6.2	0.0	17.4	54.1	28.5	*617*	*697*
70–74	93.8	6.0	0.2	13.8	52.8	33.3	*452*	*561*
75–79	95.0	5.0	0.0	8.0	61.9	30.2	*272*	*232*
80+	96.4	3.6	0.0	12.4	58.5	29.1	*122*	*87*

Note: The response categories are 'manage very well', 'manage quite well', 'get by alright', 'don't manage very well', 'have some financial difficulties' and 'have severe financial difficulties'. For the purposes of this table, 'having financial difficulty' includes those reporting that they 'don't manage very well', 'have some financial difficulties' or 'have severe financial difficulties'. For the purposes of this table, 'managing very well' includes only those reporting in the highest category ('manage very well').

For variable definitions, see AE.9 and AE.23. For related text, see E.29 and E.30.

Table EL6a. Persistence of having too little money to do three or more items of the material deprivation index (waves 4–8), by education and family type: aged 50–SPA

Education and family type in 2008–09	Reports three or more items ... Never (%)	Sometimes (%)	Always (%)	*Wted N*	*Unwted N*
Aged 50–SPA	**76.5**	**20.8**	**2.7**	***2,639***	***2,439***
Single men	**65.9**	**27.6**	**6.5**	***311***	***271***
Low education	56.5	36.0	7.6	*146*	*113*
Medium education	69.6	24.1	6.3	*112*	*101*
High education	84.2	11.7	4.1	*53*	*57*
Single women	**44.6**	**43.9**	**11.6**	***255***	***252***
Low education	37.7	49.0	13.2	*99*	*85*
Medium education	46.2	41.7	12.1	*101*	*102*
High education	53.9	38.5	7.6	*55*	*65*
Partnered men	**84.2**	**15.0**	**0.8**	***1,265***	***1,154***
Low education	78.3	20.8	0.9	*459*	*370*
Medium education	87.0	11.9	1.0	*476*	*450*
High education	88.4	11.3	0.3	*331*	*334*
Partnered women	**78.5**	**20.0**	**1.5**	***808***	***762***
Low education	69.5	26.6	3.9	*256*	*209*
Medium education	80.1	19.7	0.3	*387*	*369*
High education	88.9	10.4	0.7	*165*	*184*

See paragraph E.31 for the definition and description of the items on the deprivation index.
For variable definitions, see AE.4 and AE.23. For related text, see E.31–E.33.

Table EL6b. Persistence of having too little money to do three or more items of the material deprivation index (waves 4–8), by education and family type: aged SPA–74

Education and family type in 2008–09	Reports three or more items ... Never (%)	Sometimes (%)	Always (%)	*Wted N*	*Unwted N*
Aged SPA–74	**80.0**	**18.2**	**1.8**	***2,116***	***2,493***
Single men	**75.6**	**23.9**	**0.5**	***143***	***155***
Low education	72.4	26.8	0.8	*86*	*87*
Medium education	(80.7)	(19.3)	(0.0)	*41*	*47*
High education	–	–	–	*16*	*21*
Single women	**65.0**	**30.4**	**4.6**	***455***	***557***
Low education	57.8	37.9	4.3	*244*	*264*
Medium education	71.3	22.9	5.8	*163*	*215*
High education	79.7	17.9	2.4	*48*	*78*
Partnered men	**86.0**	**13.4**	**0.6**	***533***	***630***
Low education	81.9	17.1	1.1	*278*	*286*
Medium education	89.0	11.0	0.0	*166*	*215*
High education	93.2	6.8	0.0	*90*	*129*
Partnered women	**84.4**	**14.3**	**1.3**	***985***	***1151***
Low education	81.0	16.9	2.1	*483*	*493*
Medium education	86.6	12.8	0.6	*380*	*478*
High education	90.8	8.5	0.7	*122*	*180*

See paragraph E.31 for the definition and description of the items on the deprivation index. For variable definitions, see AE.5 and AE.23. For related text, see E.31–E.33.

Table EL6c. Persistence of having too little money to do three or more items of the material deprivation index (waves 4–8), by education and family type: aged 75+

Education and family type in 2008–09	Reports three or more items ... Never (%)	Sometimes (%)	Always (%)	*Wted N*	*Unwted N*
Aged 75+	**83.8**	**15.8**	**0.4**	***763***	***600***
Single men	**91.4**	**8.6**	**0.0**	***82***	***64***
Low education	(88.4)	(11.6)	(0.0)	*52*	*37*
Medium education	–	–	–	*21*	*17*
High education	–	–	–	*8*	*10*
Single women	**79.8**	**19.6**	**0.7**	***293***	***221***
Low education	76.7	22.6	0.7	*181*	*121*
Medium education	83.7	15.7	0.6	*99*	*87*
High education	–	–	–	*12*	*13*
Partnered men	**86.7**	**13.3**	**0.0**	***226***	***190***
Low education	81.6	18.4	0.0	*122*	*91*
Medium education	92.7	7.3	0.0	*82*	*76*
High education	–	–	–	*22*	*23*
Partnered women	**83.0**	**16.2**	**0.9**	***163***	***125***
Low education	81.6	16.9	1.5	*94*	*64*
Medium education	83.6	16.4	0.0	*60*	*50*
High education	–	–	–	*9*	*11*

See paragraph E.31 for the definition and description of the items on the deprivation index.
For variable definitions, see AE.5 and AE.23. For related text, see E.31–E.33.

Table EL7a. Percentage of men employed or self-employed at baseline (wave 4) and, of those, percentage still in employment or self-employment at waves 5–8, by wealth group and age

Wealth group and age in 2008–09	Whole sample: % in empl. or self-empl. in 2008–09	Of those employed or self-employed at baseline: % still in employment or self-employment at ... Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
All men (50–74)	**56.1**	**100**	**84.7**	**70.0**	**57.8**	**47.3**	***1,263***	***1,184***
Lowest	39.9	100	84.8	69.4	56.5	41.9	*149*	*118*
2nd	59.3	100	86.5	77.1	63.6	55.6	*238*	*201*
3rd	61.5	100	87.2	70.2	60.2	45.3	*272*	*248*
4th	59.0	100	84.3	67.8	55.4	41.3	*281*	*282*
Highest	58.1	100	81.7	66.8	54.3	50.7	*322*	*335*
Men (50–54)	**84.8**	**100**	**92.4**	**90.3**	**84.6**	**77.7**	***283***	***242***
Lowest	58.9	–	–	–	–	–	*36*	*27*
2nd	87.8	100	93.6	92.7	91.1	88.7	*65*	*55*
3rd	93.8	100	95.0	91.2	89.7	76.8	*66*	*51*
4th	88.0	(100.0)	(97.5)	(93.6)	(80.6)	(64.8)	*56*	*48*
Highest	92.7	100	88.6	83.9	75.3	76.2	*61*	*61*
Men (55–59)	**77.1**	**100**	**89.2**	**76.2**	**62.2**	**46.6**	***521***	***415***
Lowest	51.3	(100.0)	(88.5)	(77.9)	(61.3)	(36.3)	*59*	*38*
2nd	78.9	100	87.0	81.3	60.1	48.2	*114*	*82*
3rd	92.4	100	93.4	76.9	69.0	46.1	*99*	*76*
4th	83.5	100	91.9	75.1	65.3	48.4	*113*	*99*
Highest	78.2	100	86.1	71.8	57.0	48.7	*136*	*120*
Men (60–64)	**59.7**	**100**	**76.4**	**50.7**	**35.6**	**28.1**	***332***	***368***
Lowest	43.3	(100.0)	(84.0)	(48.8)	(31.6)	(28.3)	*42*	*39*
2nd	57.0	(100.0)	(80.3)	(51.8)	(40.0)	(35.1)	*41*	*44*
3rd	71.9	100	79.0	51.7	34.5	25.2	*85*	*91*
4th	62.3	100	71.4	50.5	35.5	21.4	*80*	*94*
Highest	59.8	100	73.1	50.1	36.6	34.0	*84*	*100*
Men (65–74)	**18.5**	**100**	**70.6**	**49.7**	**38.0**	**32.4**	***127***	***159***
Lowest	12.3	–	–	–	–	–	*13*	*14*
2nd	15.9	–	–	–	–	–	*17*	*20*
3rd	15.6	(100.0)	(68.6)	(49.5)	(32.4)	(25.7)	*23*	*30*
4th	21.7	(100.0)	(66.7)	(41.1)	(26.9)	(24.9)	*33*	*41*
Highest	23.6	100	74.3	59.0	50.5	53.5	*41*	*54*

For variable definitions, see AE.3, AE.9, AE.22 and AE.23. For related text, see E.34.

Table EL7b. Percentage of women employed or self-employed at baseline (wave 4) and, of those, percentage still in employment or self-employment at waves 5–8, by wealth group and age

Wealth group and age in 2008–09	Whole sample: % in empl. or self-empl. in 2008–09	Of those employed or self-employed at baseline: % still in employment or self-employment at ...					*Wted N*	*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8		
All women (50–74)	**42.1**	**100**	**80.1**	**64.8**	**51.9**	**39.3**	***1,050***	***1,111***
Lowest	26.1	100	83.6	67.7	60.9	43.9	*107*	*103*
2nd	49.5	100	82.0	66.9	56.0	40.8	*226*	*225*
3rd	41.3	100	81.2	65.1	51.8	39.6	*221*	*233*
4th	46.6	100	75.9	58.6	45.3	36.7	*238*	*258*
Highest	44.5	100	79.8	67.1	50.9	38.3	*256*	*292*
Women 50–54	**75.0**	**100**	**93.0**	**88.0**	**79.4**	**65.2**	***252***	***259***
Lowest	43.4	–	–	–	–	–	*26*	*25*
2nd	79.9	100	93.7	88.9	78.6	65.2	*62*	*61*
3rd	83.3	100	91.8	87.2	76.5	70.9	*58*	*54*
4th	83.4	100	90.6	87.9	77.3	59.3	*50*	*56*
Highest	81.1	100	98.1	91.7	83.3	61.7	*56*	*63*
Women 55–59	**66.5**	**100**	**81.6**	**63.1**	**48.6**	**33.8**	***480***	***462***
Lowest	42.6	(100.0)	(91.7)	(77.7)	(68.3)	(42.0)	*49*	*43*
2nd	78.4	100	75.2	58.9	50.5	35.4	*114*	*104*
3rd	64.1	100	82.7	65.1	50.6	31.5	*87*	*85*
4th	77.9	100	81.1	59.6	41.3	34.7	*119*	*116*
Highest	64.3	100	83.3	63.0	44.5	29.5	*112*	*114*
Women 60–64	**37.3**	**100**	**69.0**	**50.5**	**37.7**	**28.3**	***230***	***279***
Lowest	25.1	–	–	–	–	–	*24*	*26*
2nd	43.0	(100.0)	(85.0)	(67.6)	(50.7)	(28.4)	*40*	*46*
3rd	41.6	100	72.7	47.7	31.4	24.0	*58*	*70*
4th	32.7	100	60.9	35.2	31.8	24.2	*45*	*57*
Highest	41.7	100	62.2	57.0	41.6	36.4	*63*	*80*
Women 65–74	**10.7**	**100**	**63.6**	**44.8**	**28.2**	**23.8**	***87***	***111***
Lowest	5.9	–	–	–	–	–	*8*	*9*
2nd	7.6	–	–	–	–	–	*11*	*14*
3rd	9.5	–	–	–	–	–	*18*	*24*
4th	14.9	–	–	–	–	–	*24*	*29*
Highest	14.3	(100.0)	(68.2)	(56.6)	(31.8)	(30.6)	*26*	*35*

For variable definitions, see AE.3, AE.9, AE.22 and AE.23. For related text, see E.34.

Table EL8. Percentage not employed or self-employed at baseline (wave 4) and, of those, percentage in employment or self-employment at waves 4–8, by age and gender

Age in 2008–09 and gender	Whole sample: % not in empl. or self-empl. in 2008–09	Of those not empl. or self-empl. at baseline: % in employment or self-employment at … Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Wted N*	*Unwted N*
Men (50–74)	**43.9**	**0**	**4.3**	**3.7**	**4.0**	**3.5**	***988***	***1,017***
50–54	15.2	0	8.4	16.5	13.3	10.9	*51*	*40*
55–59	22.9	0	12.8	11.9	12.8	11.4	*155*	*112*
60–64	40.3	0	3.8	2.0	2.6	2.1	*224*	*234*
65–74	81.5	0	1.8	0.9	1.2	1.2	*558*	*631*
Women (50–74)	**57.9**	**0**	**3.1**	**3.1**	**1.8**	**1.7**	***1,443***	***1,593***
50–54	25.0	0	7.6	8.0	4.5	5.8	*84*	*79*
55–59	33.5	0	7.0	6.5	4.6	4.2	*242*	*206*
60–64	62.7	0	4.2	3.8	1.6	1.9	*387*	*448*
65–74	89.3	0	0.7	0.9	0.6	0.4	*730*	*860*

For variable definitions, see AE.3 and AE.23. For related text, see E.35.

Table EL9a. Persistency of health problem limiting ability to work in waves 4–8, by wealth group and age: men aged below 74 at baseline only

Wealth group and age in 2008–09	Health limits ability to work ... Never (%)	Sometimes: transitory (%)	Sometimes: onset (%)	Always (%)	*Wted N*	*Unwted N*
All men (50–74)	**68.4**	**23.0**	**7.4**	**1.2**	***2,243***	***2,192***
Lowest	47.8	36.8	12.2	3.3	*374*	*296*
2nd	62.9	28.5	7.1	1.4	*396*	*349*
3rd	69.3	22.8	7.2	0.7	*443*	*428*
4th	72.1	19.8	6.7	1.4	*476*	*503*
Highest	82.4	12.6	5.0	0.0	*553*	*616*
Men (50–54)	**76.3**	**17.0**	**6.3**	**0.4**	***334***	***282***
Lowest	(43.0)	(40.2)	(14.7)	(2.0)	*61*	*45*
2nd	79.7	12.9	7.4	0.0	*74*	*63*
3rd	77.0	17.2	5.8	0.0	*70*	*55*
4th	87.6	10.0	2.4	0.0	*63*	*54*
Highest	91.7	6.8	1.5	0.0	*66*	*65*
Men (55–59)	**73.1**	**19.4**	**5.9**	**1.6**	***676***	***527***
Lowest	48.0	37.3	10.4	4.4	*115*	*72*
2nd	64.5	28.1	5.9	1.5	*144*	*102*
3rd	81.6	13.2	5.2	0.0	*107*	*83*
4th	80.5	11.3	5.5	2.6	*136*	*118*
Highest	85.9	10.5	3.6	0.0	*174*	*152*
Men (60–64)	**68.1**	**22.8**	**7.5**	**1.5**	***552***	***598***
Lowest	53.4	30.0	12.5	4.0	*96*	*79*
2nd	54.8	34.3	7.7	3.2	*70*	*73*
3rd	65.3	26.3	8.4	0.0	*117*	*126*
4th	72.7	18.7	6.9	1.7	*128*	*148*
Highest	83.0	13.2	3.8	0.0	*141*	*172*
Men (65–74)	**60.1**	**29.6**	**9.2**	**1.1**	***681***	***785***
Lowest	45.1	40.5	12.3	2.2	*102*	*100*
2nd	54.6	35.9	8.3	1.2	*108*	*111*
3rd	60.0	29.7	8.4	2.0	*149*	*164*
4th	57.3	32.7	9.5	0.6	*149*	*183*
Highest	74.8	16.5	8.6	0.0	*173*	*227*

For variable definitions, see AE.3, AE.9, AE.22 and AE.23. For related text, see E.36 and E.37.

Table EL9b. Persistency of health problem limiting ability to work in waves 4–8, by wealth group and age: women aged below 74 at baseline only

Wealth group and age in 2008–09	Never (%)	Health limits ability to work ... Sometimes: transitory (%)	Sometimes: onset (%)	Always (%)	*Wted N*	*Unwted N*
All women (50–74)	**65.8**	**25.9**	**6.9**	**1.4**	***2,485***	***2,695***
Lowest	47.0	40.2	9.1	3.6	*410*	*383*
2nd	60.9	30.1	8.3	0.7	*457*	*480*
3rd	65.4	25.8	7.2	1.6	*536*	*567*
4th	73.9	19.6	5.8	0.7	*508*	*577*
Highest	76.4	17.9	4.9	0.8	*574*	*688*
Women (50–54)	**70.9**	**22.5**	**6.1**	**0.4**	***336***	***337***
Lowest	51.2	42.2	4.1	2.5	*60*	*54*
2nd	65.5	26.4	8.1	0.0	*77*	*75*
3rd	76.8	16.4	6.8	0.0	*70*	*65*
4th	79.1	15.0	5.9	0.0	*60*	*65*
Highest	81.1	13.6	5.3	0.0	*69*	*78*
Women (55–59)	**71.0**	**21.1**	**6.2**	**1.7**	***720***	***667***
Lowest	49.3	35.1	10.8	4.8	*113*	*93*
2nd	64.0	25.9	9.3	0.7	*145*	*132*
3rd	69.1	21.5	8.3	1.1	*135*	*125*
4th	82.5	14.2	2.0	1.4	*153*	*146*
Highest	82.2	13.7	2.7	1.4	*174*	*171*
Women (60–64)	**67.8**	**24.8**	**6.6**	**0.8**	***615***	***725***
Lowest	47.2	40.2	10.3	2.3	*95*	*98*
2nd	67.6	24.0	8.3	0.0	*94*	*107*
3rd	67.3	25.9	6.1	0.7	*139*	*156*
4th	74.3	20.3	5.4	0.0	*137*	*165*
Highest	75.5	18.5	4.7	1.3	*149*	*199*
Women (65–74)	**57.6**	**32.3**	**8.1**	**1.9**	***813***	***966***
Lowest	43.3	43.5	9.1	4.1	*141*	*138*
2nd	50.7	40.3	7.4	1.5	*141*	*166*
3rd	57.2	32.3	7.4	3.1	*191*	*221*
4th	63.3	26.1	9.9	0.8	*158*	*201*
Highest	69.7	23.0	7.1	0.3	*183*	*240*

For variable definitions, see AE.3, AE.9, AE.22 and AE.23. For related text, see E.36 and E.37.

S. Social domain tables

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Introduction

S.1 This chapter presents selected data tables from the Social domain of the English Longitudinal Study of Ageing (ELSA). The tables are split into two sections.

- Cross-sectional tables (Tables S1–S12) involve classification by gender and age (divided into five-year categories) and classification by gender and wealth group. Tables S1–S12 contain data for all core members at wave 8 (2016–17) from wave 4 (2008–09) onwards, including refreshment sample members added to ELSA in 2008–09 (wave 4), 2012–13 (wave 6) and 2014–15 (wave 7). These cross-sectional tables show a representative sample of people aged 50 and above in 2016–17.
- Longitudinal tables (Tables SL1–SL7) include a balanced ELSA sample who participated in all of waves 4 to 8. Again, classifications by gender and age and by gender and wealth group are presented. The longitudinal tables show the change over time in a representative sample of people aged 50 and above in 2008–09. For example, Table SL4a shows the percentage of people using public transport in wave 4 and the percentage still using public transport in every wave up to and including wave 8 (2016–17). Differences across the waves can be interpreted as a consequence of a combination of ageing and period effects.

S.2 The unit of observation in all tables is the individual. The data are weighted using either a cross-sectional (main questionnaire or self-completion questionnaire) or longitudinal weight as appropriate. The variables included in each table have been selected to provide a broad picture of the data available from the Social domain of ELSA. A glossary of the measures is provided in the annex to this chapter.

Cross-sectional tables

Socio-demographic

S.3 Table S1a shows the percentage of men and women by marital status and age in 2016–17. The majority of men and women are reportedly married or have remarried. The percentage of men and women reporting as widowed rises considerably with age, and this is particularly noticeable for women. This occurs at a greater rate between the oldest age groups. Over half of women aged 80 and above are widowed (56%), compared with just over a quarter of men aged 80 and above (29%). There is a steady decline in the percentage of men who remained single as they aged, with 3% of men aged 80 or above reporting being single. This is compared with a U-shaped relationship with age for women. The percentage of men and women reporting as divorced or separated declines with age, although this happens at a faster rate among women than men.

S.4 Table S1b shows the percentage of men and women by marital status and wealth in 2016–17. The percentage of men and women married or remarried in the three highest wealth groups is as much as double that of the lowest wealth group. Men and women in the lowest wealth group are much more likely to be single, divorced or separated, or widowed than those in higher wealth groups. This is partially explained by the family-level wealth measure used in the analysis (see Table E3 in the Economics domain tables, Chapter E).

S.5 Table S2a shows the percentage of men and women by ethnicity and age in 2016–17. Across each age group, the vast majority of men (94%) and women (95%) identify as white. However, the percentage of white respondents increases with age particularly for men. Table S2b shows the percentage of men and women by ethnicity and wealth group in 2016–17. Of those men and women who self-identified as non-white, a higher proportion were in the lowest wealth group than in the highest wealth group.

Internet and recreation

S.6 Table S3a shows the percentage of men and women by usage of the internet and age in 2016–17. Around four-fifths of both men (84%) and women (78%) report that they use the internet. Usage of the internet declines with age similarly for men and women, although women aged 80 and above are much less likely to use the internet than men of the same age (32% and 53%, respectively).

S.7 Table S3b shows the percentage of men and women by usage of the internet and wealth in 2016–17. There is a strong wealth gradient in internet usage among men and women. Over two-thirds of men in the lowest wealth group report using the internet (68%), compared with over nine-tenths of those in the highest wealth group (96%). These figures are 66% and 92%, respectively, for women.

S.8 Table S5a shows the percentage of men and women who have taken a holiday, in the UK or abroad, in the last year by age in 2016–17. At least three-quarters of men and women aged between 55 and 74 have taken a holiday in the last year. Around two-thirds of men and women aged 75–79 have taken a holiday in the last year (61% and 67%, respectively), but by age 80, this is just half of men (51%) and less than half of women (45%).

S.9 Table S5b shows the percentage of men and women who have taken a holiday, in the UK or abroad, in the last year by wealth in 2016–17. Around nine-tenths of men and women in the highest wealth group report having taken a holiday within the last year (88% and 90%, respectively), compared with around half of men and women in the lowest wealth group (48% and 56%, respectively).

Transport and services

S.10 Table S5a shows the percentage of men and women by the frequency of public transport use and age in 2016–17. Public transport usage declines rapidly for men and women over the age of 80, with almost half of men and women never using public transport by age 80.

S.11 Table S5b shows the percentage of men and women by the frequency of public transport use and wealth in 2016–17. Men and women in lower wealth groups are more likely to report using public transport regularly (i.e. at least once a week) than those in higher wealth groups, but those in lower wealth groups are also more likely to report never using public transport than those in higher wealth groups.

S.12 Table S6a shows the percentage of men and women who have access to a car or van when needed, by age in 2016–17. Of those who do, the table shows the percentage who drive this vehicle themselves; and of those who do not, the table shows the percentage who have driven a vehicle in the past. The percentage of those reporting access to a car or van remains reasonably stable across age groups, but a sharp decline is reported by age 80. At age 80 and above, around three-quarters of men and three-fifths of women have access to a vehicle when needed. The majority of men of all ages drive this vehicle themselves, but among women the percentage driving themselves declines with age at a greater rate. Four-fifths of men aged 80 and above (81%) drive their own vehicle, compared with half of women aged 80 and above (52%). The percentage of non-drivers in 2016–17 who have driven in the past increases with age at a greater rate for men than for women. Four-fifths of non-driving men aged 80 and above (81%) have driven in the past, which is over twice as many women aged 80 and above (39%).

S.13 Table S6b shows the percentage of men and women who have access to a car or van when needed, by wealth in 2016–17. Of those who do, the table shows the percentage who drive this vehicle themselves; of those who do not, the table shows the percentage who have driven a vehicle in the past. Almost all men and women in the highest wealth group have access to a vehicle when needed, compared with just over two-thirds of men (67%) and just over half of women (56%) in the lowest wealth group. At least nine-tenths of men and women in the highest wealth group drive this vehicle themselves. However, in the lowest wealth group four-fifths of men drive vehicles themselves, compared with just over half of women (83% and 54%, respectively). Among non-drivers, rates of having driven in the past are higher among higher wealth groups. Non-driving men in the lowest wealth group are over twice as likely to have driven in the past than non-driving women in the lowest wealth group.

Providing social support

S.14 Table S7a shows the percentage of men and women by frequency of voluntary work and age in 2016–17. The prevalence of frequent voluntary work (i.e. twice a month or more) among men and women increased with age until age 70. A fifth of men and women aged 70–74 (21% each) do voluntary work at least twice a month. The prevalence of volunteering declines sharply among those aged 80 and above, with only a tenth of men and women in this age group doing voluntary work on a regular basis.

S.15 Table S7b shows the percentage of men and women by the frequency of voluntary work and wealth in 2016–17. Men and women in higher wealth groups are more likely to volunteer and volunteer more often than those in lower wealth groups. At least three-quarters of men and women in the highest wealth group (25% and 29%, respectively) do regular voluntary work, compared with a tenth of men and women in the lowest wealth group.

S.16 Table S8a shows the percentage of men and women who cared for someone in the last month by age in 2016–17. The prevalence of caring for someone in the last month is 11% among men and 17% among women. The percentage of men and women caring for someone in the past month declines with age, although this happens at a faster rate among women than men. The percentage of men volunteering halves from 13% at age 55 to 7% at age 80, but among women this decrease is from 24% to 7%.

S.17 Table S8b shows the percentage of men and women who cared for someone in the last month by wealth in 2016–17. The percentage who cared for someone in the last month is similar across wealth groups for men but increases with wealth group for women.

Receipt of social support

S.18 Table S9a shows the percentage of men and women with activities of daily living (ADL) or instrumental activities of daily living (IADL) difficulties (see AS.9 for details of definitions) who receive help (including from their partner or other people in the household) by age in 2016–17. Three-tenths of men (30%) and two-fifths of women (40%) with a difficulty receive help. The proportion increases with age in men and women. Over half of men aged 80 and above (57%) and over two-thirds of women aged 80 and above (67%) with a difficulty receive help.

S.19 Table S9b shows the percentage of men and women with an ADL or IADL difficulty who receive help (including from their partner or other people in the household) by wealth in 2016–17. The proportion of men and women with a difficulty who receive help is lower for those in higher wealth groups. Across all wealth groups, a higher percentage of women receive help than men.

S.20 Table S10a shows the mean number of close relationships with children, family and friends for men and women by age in 2016–17. On average, men and women have six or seven close relationships. Women have a higher number of close relationships than men, although the difference is marginal.

S.21 Table S10b shows the mean number of close relationships with children, family and friends for men and women by wealth in 2016–17. On average, men and women in the higher wealth groups have marginally more close contacts than those in the lower wealth groups.

Perceived social status

S.22 Table S11a shows the percentage of men and women by self-perceived social status and age in 2016–17. Two-fifths of men and women perceive their social position to be on the third, fourth or fifth rung of a five-point social ladder, where the fifth rung is the best-off and the first rung is the worst-off.

S.23 Table S11b shows the percentage of men and women by self-perceived social status and wealth in 2016–17. Men and women in the lower wealth groups are more likely to rank their status lower on the social ladder than those in the higher wealth groups.

Expectation of life expectancy

S.24 Table S12a shows the mean self-perceived chance of living to 85 for men and women aged below 70 by age in 2016–17. Women are more optimistic about their chances of living to 85 than men. The average man believes that there is a 51% chance he will live to 85, compared with the average woman believing she has a 56% chance of doing so. The percentage of women who expect to live to age 85 increases steadily with age. For men, the percentage expecting to live to 85 is lower at age 65–69 than at age 55–59.

S.25 Table S12b shows the mean self-perceived chance of living to 85 for men and women aged below 70 by wealth in 2016–17. Men and women in the highest wealth group are around 10 percentage points more likely to expect to live to 85 than those in the lowest wealth group. Nonetheless, women in the lowest wealth group, on average, believe they have a 51% chance of living to 85 and men in the lowest wealth group, on average, believe they have a 44% chance of living to 85.

Longitudinal tables

Marital status

S.26 Table SL1a shows the percentage of men and women married or remarried at baseline (wave 4) and the percentage still married across each wave, by age. The majority of married men and women in 2008–09 remained in a marriage by 2016–17. However, this varies by age, particularly for women. For example, just under two-thirds (61%) of married women aged 75 and above at baseline were still married by wave 8, compared with at least 90% of women aged between 50 and 69 in 2008–09. Almost four-fifths (79%) of men aged 75 and over at baseline were still married by wave 8.

S.27 Table SL1b shows the percentage of men and women married or remarried at baseline (wave 4) and the percentage still married across each wave, by wealth. Men and women married in 2008–09 in the lowest wealth group are less likely to remain in a marriage by 2016–17 than those in higher wealth groups.

Internet

S.28 Table SL2a shows the percentage of men and women using the internet at baseline (wave 4) and the percentage still using it in subsequent waves, by age. The majority of men and women using the internet in 2008–09 continued to use the internet by 2016–17, although there is a slightly faster decline by age among women in older age groups than men.

S.29 Table SL2b shows the percentage of men and women using the internet at baseline (wave 4) and the percentage still using it in subsequent waves, by wealth. Although men and women in higher wealth groups are more likely to be internet users to begin with, the percentage of all internet users at baseline still using the internet in 2016–17 is high across all wealth groups.

S.30 Table SL2c shows the percentage of men and women not using the internet at baseline and, of those, the percentage using it in subsequent waves, by age. Over half of men and women aged 50–64 in 2008–09 who were not using the internet at baseline stated that they were using the internet by 2016–17, with higher rates of new internet use reported among women than men. The proportion of men and women starting to use the internet is lower for each older age group, particularly those aged 70 and above at baseline.

S.31 Table SL2d shows the percentage of men and women not using the internet at baseline and, of those, the percentage using it in subsequent waves, by wealth. Men and women in the highest wealth group are considerably more likely to start using the internet at any wave as those in the lowest wealth group, with over half of men and women in the highest wealth group using the internet by 2016–17 compared with less than a third of men and women in the lowest wealth group.

Holidays

S.32 Table SL3a shows the percentage of men and women who had been on holiday in the last year at baseline (wave 4) and the percentage who have still been on holiday in the last year in subsequent waves, by age. In each wave up to wave 8, over four-fifths of men and women aged between 50 and 69 who had been on holiday in 2008–09 had also been on holiday in the last year. The proportion of men and women continuing to go on holiday in subsequent waves is lower for individuals in the oldest two cohorts, with the steepest decline in going on holiday observed among women aged 75 and above at baseline. By 2016–17, just over half of men and women aged 75 and above in 2008–09 had been on holiday, after reporting they had been on holiday at baseline (58% and 52%, respectively).

S.33 Table SL3b shows the percentage of men and women who had been on holiday in the last year at baseline (wave 4) and the percentage who have still been on holiday in the last year in subsequent waves, by wealth. Men and women in the lowest wealth group are more likely to report not going on holiday in subsequent waves. By 2016–17, around a third of men and women (37% and 30%, respectively) in the lowest wealth group reported not going on holiday in the last year, having reported that they did at baseline. This compares with around one-tenth of men and women in the highest wealth group.

Transport

S.34 Table SL4a shows the percentage of men and women who used public transport at baseline (wave 4) and the percentage still using public transport in subsequent waves, by age. The majority of men and women who had already been using public transport in 2008–09 still used public transport in 2016–17. The proportion is lower for those aged 75 and above at baseline for men and women, of whom under two-thirds still used public transport in 2016–17 (61% for both).

S.35 Table SL4b shows the percentage of men and women who used public transport at baseline (wave 4) and the percentage still using public transport in subsequent waves, by wealth. At least three-quarters of men and women in each wealth group still used public transport in subsequent waves of ELSA.

S.36 Table SL4c shows the percentage of men and women who did not use public transport at baseline (wave 4) and, of those, the percentage using public transport in subsequent waves, by age. Men and women aged 55–59 in 2008–09 are more likely to start using public transport by 2016–17 than those in other age groups. Women aged 75 and above in 2008–09 are the least likely to be using public transport by 2016–17, with two-thirds fewer women than men in this age cohort reporting the use of public transport at wave 8 (11% and 33%, respectively).

S.37 Table SL4d shows the percentage of men and women who did not use public transport at baseline (wave 4) and, of those, the percentage using public transport in subsequent waves, by wealth. Men and women in the lowest wealth group are less likely to be using public transport by 2016–17 than those in higher wealth groups. Women in the lowest wealth group are around 10% less likely to report public transport use than men in the lowest wealth group. Around half as many women in the lowest wealth group report public transport use in 2016–17 than in the highest wealth group (19% and 42%, respectively), while this gap is smaller among men in the lowest and highest wealth groups (29% and 43%, respectively).

S.38 Table SL5a shows the percentage of men and women with access to a car or van when needed at baseline (wave 4) and, of those, the percentage with a car or van when needed in subsequent waves, by age. The decline in car access for men is slight but greater among those aged 70 and above at baseline. The decline is faster among women than men. By 2016–17, under two-thirds (62%) of women aged 75 and above, who had access to a car in 2008–09, had access to a car when needed. This compares to over four-fifths (83%) of men in the same age group.

S.39 Table SL5b shows the percentage of men and women with access to a car or van when needed at baseline (wave 4) and, of those, the percentage with a car or van when needed in subsequent waves, by wealth group. There is a general decline in car access over time across all wealth groups, but the decline is greater in the lower wealth groups and again occurs more rapidly among women. By 2016–17, 86% of men in the lowest wealth group who had access to a car at baseline still had access when needed, compared with just over three-quarters (76%) of women in the lowest wealth group.

Volunteering

S.40 Table SL6a shows the percentage of men and women volunteering at baseline (wave 4) and the percentage still volunteering in subsequent waves, by age. Men aged 60–69 at baseline are continuously more likely to volunteer across all waves, until 2016–17 when men aged 50–54 at baseline are the most likely to report volunteering. Only around a third of men and women aged 75 and above at baseline still reported volunteering by 2016–17 (37% and 34%, respectively), while at least half of all men and women in other age groups reported that they still volunteered by wave 8.

S.41 Table SL6b shows the percentage of men and women volunteering at baseline (wave 4) and the percentage still volunteering in subsequent waves, by wealth. Men and women in the higher wealth groups are more likely to continue volunteering across each wave of ELSA.

S.42 Table SL6c shows the percentage of men and women not volunteering at baseline (wave 4) and, of those, the percentage volunteering in subsequent waves, by age. The vast majority of men and women not volunteering in 2008–09 did not start volunteering by 2016–17. Men and women aged below 70 are more likely to have started volunteering than those aged 70 and above.

S.43 Table SL6d shows the percentage of men and women not volunteering at baseline (wave 4) and, of those, the percentage volunteering in subsequent waves, by wealth. Men and women in the highest wealth group are more likely to have started volunteering than those in lower wealth groups. Over a fifth of men and women (23% and 21%, respectively) in the highest wealth group not volunteering in 2008–09 had started to volunteer by 2016–17. This compares to less than a tenth of men and women in the lowest wealth group (8% and 7%, respectively).

Caring

S.44 Table SL7a shows the percentage of men and women who did not care for someone in the last month at baseline (wave 4) and, of those, the percentage caring for someone in the last month in subsequent waves, by age. The vast majority of men and women in each age group did not start caring for someone by 2016–17. However, women aged 50–64 at baseline are noticeably more likely to have started caring for someone by 2016–17 than men within these age groups.

S.45 Table SL7b shows the percentage of men and women who did not care for someone in the last month at baseline (wave 4) and, of those, the percentage caring for someone in the last month in subsequent waves, by wealth. The vast majority of men and women did not start caring for someone by 2016–17. However, men and women in the lowest wealth group are around half as likely to have started caring for someone by 2016–17 than those in highest wealth groups (5% compared with 10% of men and 7% compared with 15% of women).

Annex AS. Definitions

AS.1 *Age* is defined as age at last birthday.

AS.2 *Baseline* is defined as wave 4 of ELSA. Fieldwork for wave 4 was conducted in 2008 and 2009. Subsequent waves have been conducted every two years, with the most recent (wave 8) conducted in 2016 and 2017.

AS.3 *Caring* is defined as whether a respondent cared for someone in the last month.

AS.4 *Close relationships* are defined as the number of close relationships a respondent has with their children, family and friends.

AS.5 *Ethnicity* is measured by a dichotomous categorisation of white and non-white. The ELSA sample is known not to be representative of the ethnic minority population aged 50 and above in England.

AS.6 *Holidays taken in the last year* are measured by whether a respondent has taken a holiday, in the UK or abroad, in the last 12 months.

AS.7 *Internet usage* is defined by whether a respondent uses the internet and/or email. Those classed as not using the internet report using it less than once every three months or never.

AS.8 *Marital status* is defined as per a respondent's legal status.

AS.9 *Mobility assistance* is defined as whether a respondent with an ADL or IADL difficulty receives assistance with these activities, including from a partner or other people in the household. ADLs include dressing, getting around inside the home, bathing or showering, eating, getting in or out of bed and using the toilet. IADLs include preparing a hot meal, shopping, making telephone calls, taking medication, doing household chores and managing personal finances.

AS.10 *Private transport usage* is measured by whether a respondent has access to a car or van when needed.

AS.11 *Public transport usage* is measured by frequency categories: every day or nearly every day; two or three times a week; once a week; two or three times a month; once a month or less; and never.

AS.12 *Self-perceived chance of living to 85* is measured by the mean of respondents' assessments of the probability (0 to 100) of them living to 85 for those aged 69 and below.

AS.13 *Self-perceived social status* is measured by respondents indicating on the rung of a ladder where they stand in society based on money, education and employment.

AS.14 *Volunteering* is defined by frequency of any voluntary work carried out: twice a month or more; about once a month; every few months; about once or twice a year; less than once a year; and never.

AS.15 *Wealth* is defined as non-pension wealth minus any debt. Net non-pension wealth is measured at the family level and includes financial wealth from savings and investments minus debts and housing wealth minus mortgages.

AS.16 *Wealth groups* are formed by ordering all ELSA sample members according to the value of their total (non-pension) family wealth and dividing the sample into five equal-sized groups. The cut-off points for the wealth groups are shown in the following table, reported in January 2017 prices and rounded to the nearest £1,000.

	Wealth group definition, wave 1 (2002–03)	Wealth group definition, wave 4 (2008–09)	Wealth group definition, wave 8 (2016–17)
Lowest	Less than £22k	Less than £60k	Less than £71k
2nd	Between £22k and £132k	Between £60k and £201k	Between £71k and £210k
3rd	Between £132k and £229k	Between £201k and £303k	Between £210k and £354k
4th	Between £229k and £403k	Between £303k and £496k	Between £354k and £575k
Highest	More than £403k	More than £496k	More than £575k

AS.17 *Notes to all tables*

The unit of observation in all tables is the individual.

All cross-sectional tables are based on the cross-section of ELSA sample members in wave 8 of data. This includes refreshment sample members.

All longitudinal tables are based on individuals who have responded in all of waves 4 to 8 (the ‘balanced panel’) unless otherwise specified.

All numbers are based on weighted data. Unweighted frequencies (*N*) are reported.

For cross-sectional analyses, cross-sectional weights are used. For longitudinal analyses, longitudinal weights are used.

The fieldwork dates are shown in the following table.

	Fieldwork dates (inclusive)
Wave 1	March 2002 – March 2003
Wave 2	June 2004 – June 2005
Wave 3	May 2006 – August 2007
Wave 4	June 2008 – July 2009
Wave 5	July 2010 – June 2011
Wave 6	May 2012 – May 2013
Wave 7	June 2014 – May 2015
Wave 8	May 2016 – June 2017

Table S1a. Marital status (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Single	14.7	12.4	5.4	4.5	7.1	2.8	9.9
Married or civil partner	61.6	61.2	68.0	64.7	59.3	54.2	60.7
Remarried	9.7	9.7	8.5	13.2	13.4	10.0	10.1
Divorced or separated	12.5	14.6	12.7	10.9	9.0	4.3	12.5
Widowed	1.5	2.1	5.4	6.6	11.3	28.7	6.8
Women							
Single	7.8	7.2	4.0	2.9	2.7	5.3	6.1
Married or civil partner	51.3	54.5	57.6	52.4	48.2	26.7	49.5
Remarried	13.8	10.9	11.4	12.1	6.7	3.4	10.0
Divorced or separated	24.2	19.3	15.9	14.4	11.9	8.8	16.7
Widowed	2.9	8.1	11.2	18.1	30.5	55.8	17.7
N (unweighted)							
Men	*232*	*574*	*659*	*624*	*458*	*502*	*3,165*
Women	*316*	*725*	*888*	*679*	*534*	*719*	*3,998*

For variable definitions, see AS.1, AS.8 and AS.17. For related text, see S.3.

Table S1b. Marital status (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men						
Single	20.0	10.0	7.3	6.5	6.6	9.9
Married or civil partner	33.1	58.5	64.5	70.4	75.5	61.0
Remarried	12.5	11.1	10.9	8.8	8.0	10.2
Divorced or separated	25.3	11.9	10.8	7.9	6.0	12.1
Widowed	9.1	8.6	6.6	6.4	3.9	6.9
Women						
Single	9.6	6.8	4.5	5.6	3.7	6.1
Married or civil partner	26.0	42.2	52.5	60.3	70.0	49.5
Remarried	10.5	8.9	11.2	10.0	9.6	10.0
Divorced or separated	31.4	18.9	12.9	10.6	7.1	16.5
Widowed	22.6	23.2	19.0	13.6	9.6	17.9
N (unweighted)						
Men	*493*	*549*	*638*	*695*	*746*	*3,121*
Women	*718*	*820*	*824*	*786*	*785*	*3,993*

For variable definitions, see AS.8 and AS.15–AS.17. For related text, see S.4.

Table S2a. Ethnicity (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
White	88.3	94.1	96.9	96.2	97.9	96.6	94.0
Non-white	11.7	5.9	3.2	3.9	2.1	3.4	6.0
Women							
White	94.5	91.7	96.7	97.6	97.5	97.3	95.1
Non-white	5.5	8.3	3.3	2.4	2.5	2.7	4.9
N (unweighted)							
Men	*232*	*574*	*659*	*624*	*458*	*502*	*3,165*
Women	*316*	*726*	*888*	*679*	*534*	*720*	*4,000*

For variable definitions, see AS.1, AS.5 and AS.17. For related text, see S.5.

Table S2b. Ethnicity (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	**2nd**	**3rd**	**4th**	**Highest**	
Men						
White	91.2	94.6	94.9	94.0	94.9	93.9
Non-white	8.8	5.4	5.2	6.0	5.1	6.1
Women						
White	92.4	97.4	95.7	94.8	96.5	95.3
Non-white	7.6	2.6	4.3	5.2	3.6	4.7
N (unweighted)						
Men	*493*	*549*	*638*	*695*	*746*	*3,121*
Women	*718*	*820*	*826*	*786*	*785*	*3,935*

For variable definitions, see AS.5 and AS.15–AS.17. For related text, see S.5.

Table S3a. Use internet and/or email (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men	95.0	93.4	89.4	76.1	61.0	52.9	83.7
Women	94.0	91.3	84.0	75.6	61.0	32.4	78.3
N (unweighted)							
Men	*197*	*484*	*595*	*543*	*394*	*406*	*2,719*
Women	*263*	*654*	*795*	*604*	*456*	*549*	*3,434*

For variable definitions, see AS.1, AS.7 and AS.17. For related text, see S.6.

Table S3b. Use internet and/or email (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men	67.6	77.3	83.2	89.2	95.8	83.6
Women	65.6	69.3	76.6	86.8	92.1	78.2
N (unweighted)						
Men	*374*	*444*	*551*	*633*	*676*	*2,678*
Women	*562*	*675*	*729*	*709*	*710*	*3,385*

For variable definitions, see AS.7 and AS.15–AS.17. For related text, see S.7.

Table S4a. Taken holiday (in UK or abroad) in the last 12 months (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men	78.5	78.1	85.2	75.6	61.0	50.9	74.4
Women	81.0	82.6	81.5	77.3	66.7	45.1	73.8
N (unweighted)							
Men	*198*	*484*	*596*	*545*	*397*	*416*	*2,736*
Women	*265*	*654*	*802*	*610*	*475*	*573*	*3,492*

For variable definitions, see AS.1, AS.6 and AS.17. For related text, see S.8.

Table S4b. Taken holiday (in UK or abroad) in the last 12 months (%), by wealth group and gender: wave 8

	Wealth group in 20142016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men	48.26	69.96	76.21	83.52	87.88	74.42
Women	56.28	64.59	74.28	83.43	89.91	73.72
N (unweighted)						
Men	*380*	*448*	*555*	*632*	*680*	*2,695*
Women	*578*	*692*	*742*	*719*	*709*	*3,440*

For variable definitions, see AS.6 and AS.15–AS.17. For related text, see S.9.

Table S5a. Use of public transport (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Every day or nearly every day	15.9	8.3	6.6	4.9	8.7	6.5	9.1
Two or three times a week	4.8	8.2	10.4	12.4	11.8	11.9	9.2
Once a week	4.7	4.3	8.0	9.5	7.2	6.9	6.3
Two or three times a month	6.4	11.0	13.9	10.3	10.4	7.7	10.3
Once a month or less	37.3	29.1	33.5	34.0	28.5	21.2	31.3
Never	31.0	39.0	27.7	28.9	33.4	45.8	33.8
Women							
Every day or nearly every day	9.1	8.3	7.3	9.2	7.0	6.9	8.0
Two or three times a week	5.8	8.2	16.3	15.3	18.8	16.8	12.7
Once a week	5.8	8.3	9.8	10.2	11.2	6.7	8.0
Two or three times a month	10.6	12.0	15.8	11.9	7.8	6.9	11.1
Once a month or less	37.3	31.4	29.3	28.6	25.6	15.5	28.7
Never	31.4	31.7	21.5	24.8	29.8	47.3	31.6
N (unweighted)							
Men	*232*	*574*	*659*	*624*	*457*	*503*	*3,165*
Women	*316*	*726*	*888*	*679*	*534*	*720*	*4,000*

For variable definitions, see AS.1, AS.11 and AS.17. For related text, see S.10.

Table S5b. Use of public transport (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men						
Every day or nearly every day	15.6	7.0	7.0	7.1	9.0	9.1
Two or three times a week	10.4	6.7	8.1	9.2	10.7	9.1
Once a week	5.1	4.6	6.2	8.6	7.0	6.3
Two or three times a month	6.7	9.3	12.7	10.1	13.1	10.4
Once a month or less	20.1	28.6	30.6	38.1	37.0	31.2
Never	42.0	43.8	35.5	26.9	23.2	33.9
Women						
Every day or nearly every day	13.4	6.4	6.0	7.1	7.0	8.0
Two or three times a week	16.5	13.5	12.7	11.5	8.6	12.7
Once a week	8.2	7.7	9.6	8.3	6.6	8.1
Two or three times a month	9.6	11.7	9.6	12.4	12.5	11.1
Once a month or less	16.9	24.8	28.5	34.4	40.9	28.7
Never	35.4	35.9	33.6	26.4	24.5	31.4
N (unweighted)						
Men	*493*	*549*	*639*	*695*	*745*	*3,121*
Women	*718*	*820*	*826*	*786*	*785*	*3,935*

For variable definitions, see AS.11 and AS.15–AS.17. For related text, see S.11.

Table S6a. Use of private transport (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Has use of car or van when needed	88.4	91.4	93.8	90.8	87.4	77.2	89.4
Of whom:							
Drives a car or van themselves	95.7	96.8	94.9	94.0	93.7	80.7	93.5
Drove in the past (if no longer drives)	41.9	51.9	51.1	59.3	54.7	81.2	57.4
Women							
Has use of car or van when needed	88.2	89.1	88.3	83.8	80.7	58.2	82.1
Of whom:							
Drives a car or van themselves	87.3	82.5	76.4	73.5	65.6	51.7	76.7
Drove in the past (if no longer drives)	28.7	28.8	34.3	37.5	37.2	38.6	33.3
N (unweighted)							
Men							
Has use of car or van when needed	*116*	*232*	*574*	*659*	*624*	*457*	*503*
Drives a car or van themselves	*103*	*200*	*503*	*598*	*557*	*390*	*378*
Drove in the past (if no longer drives)	*16*	*34*	*62*	*63*	*75*	*69*	*154*
Women							
Has use of car or van when needed	*137*	*316*	*726*	*888*	*679*	*534*	*720*
Drives a car or van themselves	*117*	*268*	*638*	*773*	*557*	*422*	*425*
Drove in the past (if no longer drives)	*30*	*77*	*178*	*259*	*238*	*224*	*440*

For variable definitions, see AS.1, AS.10 and AS.17. For related text, see S.12.

Table S6b. Use of private transport (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	**2nd**	**3rd**	**4th**	**Highest**	
Men						
Has use of car or van when needed	67.0	90.1	94.3	96.2	97.2	89.3
Of whom:						
Drives a car or van themselves	82.9	94.5	94.1	95.5	96.4	93.4
Drove in the past (if no longer drives)	48.6	55.0	71.8	76.3	75.4	57.6
Women						
Has use of car or van when needed	56.2	78.2	90.2	90.5	96.5	81.8
Of whom:						
Drives a car or van themselves	54.4	69.1	79.6	82.5	89.5	76.7
Drove in the past (if no longer drives)	20.4	30.4	40.5	54.1	56.1	33.0
N (unweighted)						
Men						
Has use of car or van when needed	*493*	*549*	*639*	*695*	*745*	*3,121*
Drives a car or van themselves	*313*	*460*	*568*	*639*	*706*	*2,686*
Drove in the past (if no longer drives)	*193*	*94*	*76*	*63*	*45*	*471*
Women						
Has use of car or van when needed	*718*	*820*	*826*	*786*	*785*	*3,935*
Drives a car or van themselves	*384*	*612*	*718*	*690*	*733*	*3,137*
Drove in the past (if no longer drives)	*489*	*385*	*255*	*199*	*101*	*1,429*

For variable definitions, see AS.10 and AS.15–AS.17. For related text, see S.13.

Table S7a. Voluntary work frequency (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Twice a month or more	16.0	13.6	20.5	20.7	17.8	10.2	16.5
About once a month	3.7	3.5	4.1	3.9	3.6	4.2	4.0
Every few months	3.4	3.5	1.6	3.3	4.1	1.9	3.0
About once or twice a year	4.7	5.6	2.2	1.9	1.3	1.0	3.1
Less than once a year	2.7	1.5	1.5	0.8	1.3	0.7	1.6
Never	69.5	72.2	70.2	69.5	72.0	82.0	71.8
Women							
Twice a month or more	14.8	18.0	24.1	21.1	23.1	11.3	18.5
About once a month	6.5	3.6	4.9	3.8	5.0	2.5	4.4
Every few months	2.6	1.0	2.2	3.6	2.5	1.5	2.1
About once or twice a year	3.2	2.1	1.1	1.6	1.4	0.8	1.6
Less than once a year	0.9	1.0	0.7	1.2	0.5	0.7	1.0
Never	72.0	74.5	67.0	68.7	67.6	83.2	72.4
N (unweighted)							
Men	*227*	*551*	*635*	*603*	*435*	*469*	*3,033*
Women	*307*	*710*	*869*	*663*	*517*	*686*	*3,886*

For variable definitions, see AS.1, AS.14 and AS.17. For related text, see S.14.

Table S7b. Voluntary work frequency (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men						
Twice a month or more	11.2	8.9	16.3	19.4	24.5	16.3
About once a month	3.1	2.7	3.2	4.5	6.0	4.0
Every few months	1.0	1.0	2.3	4.5	5.7	3.0
About once or twice a year	1.5	2.9	2.1	4.5	4.1	3.1
Less than once a year	0.6	0.9	1.7	2.1	2.3	1.5
Never	82.6	83.5	74.3	65.1	57.5	72.1
Women						
Twice a month or more	10.2	14.3	19.4	22.0	28.7	18.6
About once a month	3.9	3.0	2.9	4.7	8.2	4.5
Every few months	1.3	2.1	1.2	2.4	3.7	2.1
About once or twice a year	0.6	1.3	1.9	2.6	1.5	1.6
Less than once a year	0.7	0.9	0.9	0.8	1.5	1.0
Never	83.3	78.5	73.8	67.5	56.4	72.3
N (unweighted)						
Men	*467*	*520*	*611*	*669*	*722*	*2,989*
Women	*693*	*798*	*810*	*765*	*757*	*3,823*

For variable definitions, see AS.14–AS.17. For related text, see S.15.

Table S8a. Cared for someone in the last month (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men	13.2	10.4	12.2	9.0	6.8	6.9	10.7
Women	23.6	20.3	16.7	15.1	12.6	6.5	16.5
N (unweighted)							
Men	*232*	*574*	*659*	*624*	*458*	*501*	*3,164*
Women	*316*	*726*	*888*	*679*	*534*	*720*	*4,000*

For variable definitions, see AS.1, AS.3 and AS.17. For related text, see S.16.

Table S8b. Cared for someone in the last month (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men	10.0	6.9	8.7	15.0	13.1	10.8
Women	13.8	15.3	14.3	18.8	20.6	16.4
N (unweighted)						
Men	*493*	*548*	*639*	*694*	*746*	*3,120*
Women	*718*	*820*	*826*	*786*	*785*	*3,935*

For variable definitions, see AS.3 and AS.15–AS.17. For related text, see S.17.

Table S9a. Receives help with mobility (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men	10.0	26.2	23.9	26.0	36.7	57.3	30.1
Women	25.7	32.1	31.7	34.6	41.7	67.8	40.2
N (unweighted)							
Men	*78*	*232*	*285*	*328*	*279*	*371*	*1,615*
Women	*144*	*371*	*507*	*432*	*400*	*608*	*2,522*

For variable definitions, see AS.1, AS.9 and AS.17. For related text, see S.18.

Table S9b. Receives help with mobility (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men	39.7	29.7	28.7	24.2	22.4	30.2
Women	51.0	44.4	34.6	31.9	31.2	40.2
N (unweighted)						
Men	*359*	*333*	*329*	*302*	*272*	*1,595*
Women	*561*	*567*	*525*	*449*	*379*	*2,481*

For variable definitions, see AS.9 and AS.15–AS.17. For related text, see S.19.

Table S10a. Mean number of close relationships with children, family and friends, by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men	6.1	6.2	6.6	6.8	6.3	7.1	6.6
Women	7.2	7.1	7.1	7.2	8.2	6.9	7.2
N (unweighted)							
Men	*198*	*480*	*586*	*537*	*385*	*412*	*2,697*
Women	*261*	*648*	*804*	*607*	*460*	*553*	*3,446*

For variable definitions, see AS.1, AS.4 and AS.17. For related text, see S.20.

Table S10b. Mean number of close relationships with children, family and friends, by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men	5.6	7.0	6.4	6.3	7.3	6.6
Women	6.7	7.2	7.0	7.5	7.9	7.3
N (unweighted)						
Men	*365*	*439*	*545*	*628*	*679*	*2,656*
Women	*560*	*686*	*729*	*712*	*709*	*3,396*

For variable definitions, see AS.4 and AS.15–AS.17. For related text, see S.21.

Table S11a. Self-perceived social status in society (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Worst-off	4.1	4.0	3.0	2.9	1.8	1.8	3.7
2nd	17.8	15.9	11.4	14.2	17.6	16.2	16.0
3rd	27.9	30.3	30.4	32.4	37.4	42.1	32.2
4th	46.7	42.7	47.1	43.3	36.1	34.5	42.1
Best-off	3.6	7.1	8.1	7.2	7.1	5.4	6.1
Women							
Worst-off	3.0	2.8	1.5	1.5	0.9	2.2	2.5
2nd	15.7	12.8	15.7	13.3	15.3	15.9	14.8
3rd	41.8	41.1	41.8	45.5	49.3	54.4	44.3
4th	32.7	37.6	35.5	35.2	31.7	24.5	33.5
Best-off	6.8	5.8	5.5	4.5	2.8	3.0	4.9
N (unweighted)							
Men	*195*	*474*	*586*	*543*	*392*	*404*	*2,693*
Women	*257*	*637*	*787*	*607*	*458*	*538*	*3,394*

For variable definitions, see AS.1, AS.13 and AS.17. For related text, see S.22.

Table S11b. Self-perceived social status in society (%), by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men						
Worst-off	15.2	4.4	1.4	0.2	0.0	3.8
2nd	38.1	20.5	13.3	9.0	4.0	15.9
3rd	31.0	43.7	36.8	31.8	21.1	32.5
4th	13.4	28.6	44.8	53.4	60.9	41.8
Best-off	2.4	2.8	3.8	5.6	13.9	6.1
Women						
Worst-off	8.5	2.4	1.3	0.8	0.0	2.5
2nd	31.5	20.3	11.7	8.8	3.0	14.9
3rd	45.2	51.2	51.3	44.5	29.0	44.4
4th	13.5	24.1	32.1	41.2	55.5	33.4
Best -off	1.3	2.0	3.5	4.7	12.5	4.8
N (unweighted)						
Men	*369*	*442*	*543*	*626*	*672*	*2,652*
Women	*549*	*674*	*717*	*705*	*699*	*3,344*

For variable definitions, see AS.13 and AS.15–AS.17. For related text, see S.23.

Table S12a. Mean self-perceived chance (%) of living to 85, by age and gender: wave 8

	Age in 2016–17			All
	55–59	60–64	65–69	
Men	54.0	49.8	51.1	52.1
Women	55.3	55.6	56.2	55.9
N (unweighted)				
Men	*222*	*533*	*616*	*1,480*
Women	*301*	*690*	*845*	*1,968*

For variable definitions, see AS.1, AS.12 and AS.17. For related text, see S.24.

Table S12b. Mean self-perceived chance (%) of living to 85, by wealth group and gender: wave 8

	Wealth group in 2016–17					All
	Lowest	2nd	3rd	4th	Highest	
Men	43.6	52.3	51.0	55.4	55.9	51.9
Women	51.3	53.2	55.9	58.8	61.3	56.1
N (unweighted)						
Men	*235*	*245*	*259*	*331*	*384*	*1,454*
Women	*327*	*387*	*371*	*406*	*435*	*1,926*

Note: Only includes people aged 69 and below.
For variable definitions, see AS.12 and AS.15–AS.17. For related text, see S.25.

Table SL1a. Percentage married or remarried at baseline (wave 4) and, of those, percentage still married at waves 5–8, by age and gender

Age in 2008–09	% married in 2008–09	Of those married or remarried at baseline, % still married at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**75.9**	**100**	**98.1**	**96.4**	**94.9**	**92.2**	***1,931***
50–54	69.4	100	98.6	97.0	95.6	94.6	*198*
55–59	76.0	100	98.9	98.1	97.2	95.8	*409*
60–64	78.9	100	98.0	96.2	95.0	93.0	*497*
65–69	78.7	100	98.8	97.7	95.5	94.0	*342*
70–74	75.9	100	98.4	96.8	95.8	90.7	*291*
75+	74.2	100	94.9	90.5	87.3	78.8	*194*
Women	**63.2**	**100**	**96.3**	**93.7**	**90.4**	**86.5**	***1,978***
50–54	70.2	100	97.2	94.0	92.7	91.5	*244*
55–59	71.7	100	97.4	95.2	93.6	92.0	*477*
60–64	72.5	100	98.5	96.2	92.6	88.9	*537*
65–69	65.3	100	97.0	95.6	93.5	89.7	*333*
70–74	56.8	100	92.0	88.5	84.5	74.6	*259*
75+	35.0	100	88.8	83.5	72.2	61.3	*128*

For variable definitions, see AS.1, AS.2, AS.8 and AS.17. For related text, see S.26.

Table SL1b. Percentage married or remarried at baseline (wave 4) and, of those, percentage still married at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% married in 2008–09	Of those married or remarried at baseline, % still married at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**75.9**	**100**	**98.1**	**96.7**	**95.2**	**92.5**	***1,886***
Lowest	45.0	100	93.0	91.6	89.1	85.0	*149*
2nd	76.5	100	98.0	96.2	93.4	91.3	*305*
3rd	79.2	100	99.1	98.3	97.6	95.3	*373*
4th	82.5	100	98.5	97.1	96.0	92.4	*465*
Highest	87.2	100	99.0	91.2	96.2	93.9	*594*
Women	**63.1**	**100**	**96.2**	**93.7**	**90.5**	**86.7**	***1,929***
Lowest	33.9	100	90.8	87.6	82.2	76.5	*160*
2nd	55.2	100	96.3	93.4	91.0	87.4	*303*
3rd	65.7	100	97.5	94.9	90.9	85.8	*403*
4th	75.3	100	95.4	93.1	90.0	86.4	*470*
Highest	81.5	100	97.8	95.8	93.1	90.8	*593*

For variable definitions, see AS.2, AS.8 and AS.15–AS.17. For related text, see S.27.

Table SL2a. Percentage using internet and/or email at baseline (wave 4) and, of those, percentage still using internet and/or email at waves 5–8, by age and gender

Age in 2008–09	% using internet and/or email in 2008–09	Of those using internet and/or email at baseline, % still using internet and/or email at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**68.2**	**100**	**95.1**	**98.3**	**97.5**	**97.0**	***1,250***
50–54	84.9	100	95.7	98.7	98.5	98.4	*162*
55–59	81.7	100	96.0	98.1	96.9	98.3	*324*
60–64	72.4	100	96.9	99.6	99.4	98.8	*343*
65–69	58.6	100	96.1	98.2	98.2	96.3	*196*
70–74	50.8	100	92.0	96.8	94.9	94.1	*146*
75+	41.2	100	94.0	98.3	97.0	96.1	*79*
Women	**56.6**	**100**	**94.5**	**95.8**	**96.2**	**96.1**	***1,336***
50–54	78.8	100	95.4	98.0	96.7	97.5	*197*
55–59	75.9	100	95.2	98.0	98.5	98.5	*390*
60–64	61.3	100	95.5	97.3	98.7	97.4	*384*
65–69	47.7	100	96.5	94.8	96.2	97.9	*206*
70–74	34.3	100	90.0	96.3	93.8	92.2	*119*
75+	17.3	100	94.6	90.6	93.0	93.0	*40*

For variable definitions, see AS.1, AS.2, AS.7 and AS.17. For related text, see S.28.

Table SL2b. Percentage using internet and/or email at baseline (wave 4) and, of those, percentage still using internet and/or email at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% using internet and/or email in 2008–09	Of those using internet and/or email at baseline, % still using internet and/or email at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**68.2**	**100**	**95.7**	**98.5**	**97.9**	**98.2**	***1,228***
Lowest	43.1	100	91.5	99.2	97.9	98.1	*82*
2nd	56.1	100	93.4	99.2	99.2	97.3	*152*
3rd	62.7	100	93.1	96.4	95.8	98.3	*224*
4th	74.6	100	96.9	98.7	98.1	98.0	*319*
Highest	86.0	100	98.2	98.8	98.5	98.9	*451*
Women	**56.2**	**100**	**94.9**	**97.2**	**97.4**	**97.6**	***1,299***
Lowest	37.6	100	91.7	91.7	93.2	97.7	*108*
2nd	45.5	100	91.6	95.9	96.2	95.9	*191*
3rd	49.9	100	94.1	98.2	97.9	96.9	*244*
4th	63.9	100	96.8	97.6	98.3	98.3	*309*
Highest	73.4	100	96.5	98.3	98.2	98.2	*447*

For variable definitions, see AS.2, AS.7 and AS.15–AS.17. For related text, see S.29.

Table SL2c. Percentage not using internet and/or email at baseline (wave 4) and, of those, percentage using internet and/or email at waves 5–8, by age and gender

Age in 2008–09	% not using internet and/or email in 2008–09	Of those not using internet and/or email at baseline, % using internet and/or email at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**31.8**	**0**	**17.1**	**29.2**	**35.3**	**38.9**	***512***
50–54	15.1	0	25.5	55.3	54.6	55.6	*24*
55–59	18.4	0	26.5	37.1	51.2	53.6	*56*
60–64	27.7	0	23.2	38.7	45.4	53.1	*108*
65–69	41.4	0	15.3	27.3	33.6	41.2	*117*
70–74	49.8	0	6.2	17.2	22.7	21.4	*118*
75+	58.8	0	13.6	19.7	21.4	23.4	*89*
Women	**43.4**	**0**	**16.2**	**30.5**	**37.4**	**41.4**	***885***
50–54	21.2	0	41.9	54.4	58.5	69.0	*47*
55–59	24.1	0	24.9	39.6	53.1	62.1	*105*
60–64	38.7	0	20.7	41.2	51.7	56.7	*200*
65–69	52.3	0	15.9	37.1	44.9	46.5	*187*
70–74	65.7	0	11.9	22.4	26.6	27.2	*199*
75+	82.7	0	3.5	9.5	10.3	13.2	*147*

For variable definitions, see AS.1, AS.2, AS.7 and AS.17. For related text, see S.30.

Table SL2d. Percentage not using internet and/or email at baseline (wave 4) and, of those, percentage using internet and/or email at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% not using internet and/or email in 2008–09	Of those not using internet and/or email at baseline, % using internet and/or email at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**31.8**	**0**	**17.1**	**29.3**	**35.8**	**39.1**	***505***
Lowest	56.9	0	10.5	14.9	30.9	29.4	*88*
2nd	43.9	0	17.0	31.3	31.3	38.0	*114*
3rd	37.3	0	12.5	28.8	33.0	39.9	*132*
4th	25.4	0	25.6	34.5	40.0	42.3	*105*
Highest	14.0	0	25.2	44.9	52.8	52.2	*66*
Women	**43.6**	**0**	**16.2**	**30.5**	**37.3**	**41.3**	***873***
Lowest	62.4	0	10.1	19.1	31.1	31.9	*159*
2nd	54.5	0	14.0	26.6	28.7	34.2	*190*
3rd	50.1	0	15.7	31.3	39.7	39.5	*222*
4th	36.1	0	21.6	38.0	42.2	50.6	*154*
Highest	26.6	0	22.4	41.4	49.3	56.9	*148*

For variable definitions, see AS.2, AS.7 and AS.15–AS.17. For related text, see S.31.

Table SL3a. Percentage been on holiday in the last year at baseline (wave 4) and, of those, percentage still been on holiday in the last year at waves 5–8, by age and gender

Age in 2008–09	% been on holiday in 2008–09	Of those been on holiday in the last year at baseline, % still been on holiday in the last year at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**81.0**	**100**	**89.6**	**87.8**	**86.8**	**83.1**	***1,488***
50–54	86.0	100	88.8	87.7	87.0	89.2	*164*
55–59	82.7	100	92.4	89.9	93.2	91.7	*325*
60–64	80.8	100	91.6	91.7	90.0	89.2	*375*
65–69	84.0	100	90.2	89.7	90.9	81.8	*272*
70–74	74.2	100	87.7	81.5	78.2	69.4	*216*
75+	75.3	100	80.7	78.0	67.4	58.3	*136*
Women	**79.7**	**100**	**90.4**	**88.1**	**85.6**	**83.6**	***1,895***
50–54	81.7	100	88.5	92.8	89.6	91.0	*202*
55–59	80.6	100	91.9	91.1	92.9	94.7	*414*
60–64	84.6	100	91.2	91.0	89.1	89.4	*504*
65–69	82.1	100	92.6	85.9	84.8	81.1	*352*
70–74	77.5	100	87.3	85.1	80.1	71.9	*274*
75+	65.6	100	87.1	75.9	62.1	52.3	*149*

For variable definitions, see AS.1, AS.2, AS.6 and AS.17. For related text, see S.32.

Table SL3b. Percentage been on holiday in the last year at baseline (wave 4) and, of those, percentage still been on holiday in the last year at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% been on holiday in 2008–09	Of those been on holiday in the last year at baseline, % still been on holiday in the last year at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**80.8**	**100**	**89.6**	**87.7**	**86.9**	**83.2**	***1,463***
Lowest	56.8	100	72.1	72.0	73.2	62.9	*105*
2nd	75.3	100	89.6	86.4	82.7	82.4	*211*
3rd	80.8	100	90.7	88.5	88.1	82.0	*293*
4th	85.2	100	91.2	88.9	88.4	83.8	*368*
Highest	91.9	100	92.8	91.6	91.0	90.0	*486*
Women	**79.5**	**100**	**90.4**	**88.0**	**85.4**	**83.4**	***1,849***
Lowest	52.6	100	76.2	70.9	66.8	70.3	*159*
2nd	76.7	100	88.6	87.1	84.4	81.0	*321*
3rd	81.3	100	90.4	90.9	84.6	80.9	*400*
4th	87.8	100	95.4	87.6	88.1	87.4	*427*
Highest	89.5	100	92.7	92.7	91.2	88.6	*542*

For variable definitions, see AS.2, AS.6 and AS.15–AS.17. For related text, see S.33.

Table SL4a. Percentage using public transport at baseline (wave 4) and, of those, percentage still using public transport at waves 5–8, by age and gender

Age in 2008–09	% using public transport in 2008–09	Of those using public transport at baseline, % still using public transport at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**65.3**	**100**	**86.7**	**85.3**	**81.9**	**79.8**	***1,667***
50–54	61.3	100	84.2	78.8	75.1	76.2	*179*
55–59	57.8	100	82.3	83.9	82.9	84.3	*320*
60–64	67.2	100	88.8	87.7	87.7	85.9	*419*
65–69	70.6	100	89.3	89.1	82.0	83.6	*299*
70–74	72.5	100	93.6	89.8	87.3	78.5	*270*
75+	68.8	100	82.8	80.8	70.5	60.8	*180*
Women	**74.6**	**100**	**89.6**	**88.0**	**85.2**	**80.3**	***2,357***
50–54	69.3	100	86.4	83.8	83.8	82.2	*246*
55–59	69.5	100	86.5	90.5	86.8	87.0	*473*
60–64	77.5	100	92.8	88.8	90.0	86.4	*591*
65–69	77.8	100	89.8	89.8	87.9	83.2	*410*
70–74	80.4	100	92.2	88.2	85.9	76.5	*367*
75+	74.8	100	89.5	83.9	73.4	61.0	*270*

For variable definitions, see AS.1, AS.2, AS.11 and AS.17. For related text, see S.34.

Table SL4b. Percentage using public transport at baseline (wave 4) and, of those, percentage still using public transport at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% using public transport in 2008–09	Of those using public transport at baseline, % still using public transport at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**65.0**	**100**	**86.6**	**85.4**	**82.1**	**80.4**	***1,626***
Lowest	59.8	100	89.0	88.4	83.3	75.5	*191*
2nd	57.0	100	85.9	83.1	82.3	75.7	*243*
3rd	62.4	100	81.9	81.5	76.5	77.7	*298*
4th	67.8	100	87.9	86.9	82.2	83.4	*387*
Highest	74.0	100	88.0	86.4	85.1	85.1	*507*
Women	**74.4**	**100**	**89.6**	**88.0**	**85.1**	**80.2**	***2,300***
Lowest	76.0	100	90.2	85.4	85.0	78.8	*360*
2nd	76.3	100	89.1	88.5	83.2	76.5	*441*
3rd	72.4	100	89.4	88.3	84.7	79.8	*473*
4th	73.5	100	91.9	89.6	87.3	84.0	*470*
Highest	74.0	100	87.8	88.2	85.6	81.5	*556*

For variable definitions, see AS.1, AS.2, AS.11 and AS.15–AS.17. For related text, see S.35.

Table SL4c. Percentage not using public transport at baseline (wave 4) and, of those, percentage using public transport at waves 5–8, by age and gender

Age in 2008–09	% not using public transport in 2008–09	Of those not using public transport at baseline, % using public transport at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**34.7**	**0**	**29.9**	**34.5**	**37.9**	**40.0**	***838***
50–54	38.7	0	26.2	26.1	33.4	33.6	109
55–59	42.2	0	30.6	38.9	43.2	48.2	217
60–64	32.8	0	30.7	36.3	38.3	42.0	201
65–69	29.4	0	34.4	37.6	40.5	38.0	128
70–74	27.5	0	25.4	27.4	30.3	29.0	106
75+	31.2	0	30.0	31.9	31.0	32.5	77
Women	**25.4**	**0**	**32.6**	**35.6**	**38.1**	**36.9**	***769***
50–54	30.7	0	30.0	32.6	30.7	26.6	107
55–59	30.5	0	39.1	44.8	54.4	56.2	207
60–64	22.6	0	36.1	42.7	43.5	44.6	161
65–69	22.2	0	34.0	29.8	32.0	31.0	113
70–74	19.6	0	23.4	31.7	33.2	28.2	94
75+	25.2	0	23.0	19.9	15.8	10.9	87

For variable definitions, see AS.1, AS.2, AS.11 and AS.17. For related text, see S.36.

Table SL4d. Percentage not using public transport at baseline (wave 4) and, of those, percentage using public transport at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% not using public transport in 2008–09	Of those not using public transport at baseline, % using public transport at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**35.0**	**0**	**29.5**	**34.4**	**37.9**	**40.0**	***823***
Lowest	40.2	0	21.2	25.2	24.5	29.2	*128*
2nd	43.0	0	23.7	27.9	30.6	30.5	*164*
3rd	37.6	0	31.3	40.8	47.0	47.9	*181*
4th	32.2	0	33.6	36.7	42.7	50.4	*175*
Highest	26.0	0	38.7	41.9	44.9	42.5	*175*
Women	**25.6**	**0**	**32.5**	**35.8**	**38.3**	**37.2**	***757***
Lowest	24.0	0	17.6	20.4	24.0	19.0	*115*
2nd	23.7	0	33.6	34.5	37.5	34.6	*129*
3rd	27.6	0	37.7	36.9	39.0	39.1	*167*
4th	26.5	0	34.3	41.7	43.3	47.4	*164*
Highest	26.0	0	36.3	42.5	45.1	42.3	*182*

For variable definitions, see AS.1, AS.2, AS.11 and AS.15–AS.17. For related text, see S.37.

Table SL5a. Percentage with access to a car or van at baseline (wave 4) and, of those, percentage still with access to a car or van at waves 5–8, by age and gender

Age in 2008–09	% with access to a car or van in 2008–09	Of those with access to a car or van at baseline, % still with access to a car or van at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**92.2**	**100**	**97.5**	**96.6**	**95.4**	**93.6**	***2,345***
50–54	91.8	100	98.1	99.4	99.4	98.5	*267*
55–59	94.2	100	97.3	97.1	96.7	96.3	*509*
60–64	92.4	100	98.0	97.9	96.9	97.0	*586*
65–69	92.9	100	98.1	97.5	95.5	95.0	*403*
70–74	88.8	100	96.7	96.2	96.6	88.7	*344*
75+	90.6	100	96.3	91.2	86.8	82.9	*236*
Women	**84.5**	**100**	**95.0**	**92.8**	**90.3**	**87.9**	***2,724***
50–54	89.4	100	96.2	95.8	95.9	96.6	*322*
55–59	89.3	100	96.4	96.7	94.7	94.5	*614*
60–64	89.5	100	96.8	97.2	96.6	93.9	*683*
65–69	85.5	100	95.0	94.9	93.5	91.5	*463*
70–74	81.6	100	93.5	89.2	87.0	86.1	*387*
75+	67.8	100	89.4	79.8	71.0	61.9	*255*

For variable definitions, see AS.1, AS.2, AS.10 and AS.17. For related text, see S.38.

Table SL5b. Percentage with access to a car or van at baseline (wave 4) and, of those, percentage still with access to a car or van at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% with access to a car or van in 2008–09	Of those with access to a car or van at baseline, % still with access to a car or van at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**92.2**	**100**	**97.4**	**96.5**	**95.4**	**93.9**	***2,293***
Lowest	75.2	100	90.6	87.5	87.3	85.9	*243*
2nd	91.2	100	96.5	95.9	94.1	92.2	*374*
3rd	94.3	100	98.5	97.8	96.9	94.9	*455*
4th	97.8	100	98.6	98.1	97.2	95.6	*550*
Highest	97.7	100	99.6	99.0	97.9	96.7	*671*
Women	**84.3**	**100**	**94.9**	**93.4**	**91.2**	**89.1**	***2,661***
Lowest	60.0	100	85.5	81.6	76.8	75.5	*302*
2nd	80.9	100	92.0	90.5	88.8	85.2	*470*
3rd	87.4	100	95.4	94.7	90.4	88.1	*569*
4th	93.1	100	98.2	96.2	95.6	93.2	*600*
Highest	97.3	100	99.0	98.4	97.4	96.7	*720*

For variable definitions, see AS.1, AS.2, AS.10 and AS.15–AS.17. For related text, see S.39.

Table SL6a. Percentage volunteering at baseline (wave 4) and, of those, percentage still volunteering at waves 5–8, by age and gender

Age in 2008–09	% volunteering in 2008–09	Of those volunteering at baseline, % still volunteering at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**28.4**	**100**	**75.0**	**72.8**	**63.7**	**58.9**	***738***
50–54	22.5	100	60.4	73.8	59.9	72.4	*66*
55–59	30.4	100	73.2	66.6	59.0	58.4	*170*
60–64	27.5	100	83.2	77.9	72.5	66.9	*179*
65–69	28.0	100	80.1	79.0	70.2	61.4	*124*
70–74	31.4	100	76.9	71.9	68.8	54.4	*121*
75+	29.7	100	69.2	66.1	49.3	36.7	*78*
Women	**31.3**	**100**	**75.9**	**67.9**	**62.3**	**56.7**	***1,032***
50–54	25.4	100	77.9	68.2	58.7	49.5	*96*
55–59	28.7	100	74.2	70.0	65.8	62.4	*200*
60–64	32.6	100	78.5	70.3	67.7	63.5	*251*
65–69	38.4	100	77.6	72.3	70.7	66.4	*210*
70–74	33.6	100	75.2	70.8	61.9	51.2	*165*
75+	29.5	100	71.4	52.0	40.1	34.3	*110*

For variable definitions, see AS.1, AS.2, AS.14 and AS.17. For related text, see S.40.

Table SL6b. Percentage volunteering at baseline (wave 4) and, of those, percentage still volunteering at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% volunteering in 2008–09	Of those volunteering at baseline, % still volunteering at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**28.1**	**100**	**75.3**	**72.6**	**64.0**	**58.6**	***715***
Lowest	15.3	100	67.5	62.5	52.5	49.0	*48*
2nd	19.1	100	72.1	64.7	64.3	49.9	*82*
3rd	27.0	100	73.5	71.6	58.2	59.8	*127*
4th	32.1	100	79.3	76.8	66.6	54.2	*176*
Highest	40.5	100	76.4	75.6	68.1	66.4	*282*
Women	**31.4**	**100**	**75.7**	**67.9**	**62.3**	**56.6**	***1,009***
Lowest	20.7	100	68.0	57.4	58.4	43.8	*99*
2nd	21.6	100	70.7	63.4	53.8	52.4	*132*
3rd	33.2	100	75.0	65.3	59.9	54.5	*218*
4th	33.9	100	79.0	75.6	66.5	62.4	*222*
Highest	45.6	100	79.3	70.5	66.3	61.1	*338*

For variable definitions, see AS.2, AS.14 and AS.15–AS.17. For related text, see S.41.

Table SL6c. Percentage not volunteering at baseline (wave 4) and, of those, percentage volunteering at waves 5–8, by age and gender

Age in 2008–09	% not volunteering in 2008–09	Of those not volunteering at baseline, % volunteering at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**71.6**	**0**	**10.2**	**12.0**	**13.2**	**13.0**	***1,648***
50–54	77.5	0	12.0	13.8	16.0	16.2	*207*
55–59	69.7	0	10.1	9.5	11.7	12.4	*340*
60–64	72.5	0	11.2	15.6	19.0	17.1	*415*
65–69	72.0	0	10.8	13.8	11.6	14.0	*286*
70–74	68.6	0	9.5	7.9	10.7	9.6	*233*
75+	70.3	0	6.3	9.9	6.2	4.6	*167*
Women	**68.7**	**0**	**12.1**	**13.1**	**13.3**	**14.0**	***1,933***
50–54	74.7	0	12.1	15.5	13.2	18.3	*245*
55–59	71.3	0	13.6	15.7	16.4	17.8	*461*
60–64	67.4	0	12.5	14.3	15.9	16.5	*479*
65–69	61.6	0	12.3	14.2	13.8	14.2	*298*
70–74	66.4	0	13.7	11.5	13.9	9.6	*281*
75+	70.5	0	7.7	5.4	3.7	3.9	*229*

For variable definitions, see AS.1, AS.2, AS.14 and AS.17. For related text, see S.42.

Table SL6d. Percentage not volunteering at baseline (wave 4) and, of those, percentage volunteering at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% not volunteering in 2008–09	Of those not volunteering at baseline, % volunteering at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**71.9**	**0**	**10.2**	**12.0**	**13.1**	**12.9**	***1,617***
Lowest	15.3	0	6.3	7.7	9.9	8.2	*252*
2nd	19.1	0	5.8	6.5	6.0	5.0	*306*
3rd	27.0	0	12.4	12.4	12.7	14.7	*329*
4th	32.1	0	12.5	14.1	15.0	13.2	*360*
Highest	40.5	0	13.9	19.2	21.6	23.1	*370*
Women	**68.6**	**0**	**12.0**	**13.2**	**13.5**	**13.9**	***1,947***
Lowest	79.3	0	8.2	9.3	6.9	7.0	*360*
2nd	78.5	0	7.0	9.3	9.0	10.0	*423*
3rd	66.8	0	13.8	13.1	14.1	14.0	*403*
4th	66.1	0	14.2	15.8	17.2	19.6	*386*
Highest	54.4	0	18.9	20.4	22.6	21.4	*375*

For variable definitions, see AS.2, AS.14 and AS.15–AS.17. For related text, see S.43.

Table SL7a. Percentage not caring for someone at baseline (wave 4) and, of those, percentage caring for someone at waves 5–8, by age and gender

Age in 2008–09	% not caring in 2008–09	Of those not caring for someone at baseline, % caring for someone at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**90.4**	**0**	**7.9**	**6.6**	**8.3**	**7.8**	***2,261***
50–54	89.3	0	7.9	7.7	11.9	10.2	255
55–59	88.2	0	8.2	6.9	7.0	8.2	476
60–64	92.9	0	7.9	5.4	9.1	8.4	575
65–69	88.5	0	8.0	7.0	7.8	7.1	379
70–74	93.3	0	9.5	6.4	7.8	6.8	345
75+	91.0	0	5.6	6.9	6.5	5.0	231
Women	**83.7**	**0**	**10.4**	**12.1**	**12.2**	**11.8**	***2,586***
50–54	80.2	0	15.5	17.5	15.2	17.0	280
55–59	81.2	0	11.7	14.8	17.1	15.1	548
60–64	78.9	0	12.0	14.0	14.8	13.3	592
65–69	86.6	0	9.3	11.9	11.1	10.4	446
70–74	85.1	0	6.4	5.6	8.2	8.1	389
75+	93.1	0	7.6	5.2	4.4	5.8	331

For variable definitions, see AS.1, AS.2, AS.3 and AS.17. For related text, see S.44.

Table SL7b. Percentage not caring for someone at baseline (wave 4) and, of those, percentage caring for someone at waves 5–8, by wealth group and gender

Wealth group in 2008–09	% not caring in 2008–09	Of those not caring for someone at baseline, % caring for someone at …					*Unwted N*
		Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	
Men	**90.5**	**0**	**7.9**	**6.6**	**8.2**	**7.7**	***2,214***
Lowest	90.7	0	4.0	3.4	6.3	4.7	*292*
2nd	90.1	0	8.4	7.7	7.2	6.9	*367*
3rd	90.9	0	8.7	7.3	8.3	6.5	*434*
4th	91.2	0	8.5	7.2	10.3	9.5	*507*
Highest	89.6	0	8.7	6.6	8.2	9.6	*614*
Women	**83.9**	**0**	**10.4**	**12.0**	**11.9**	**11.6**	***2,532***
Lowest	87.3	0	8.4	9.5	9.3	7.2	*409*
2nd	83.9	0	9.2	11.5	10.8	9.8	*476*
3rd	84.1	0	10.5	12.3	11.9	11.4	*531*
4th	83.0	0	12.3	12.2	13.3	14.7	*517*
Highest	81.6	0	11.6	14.5	14.3	14.6	*599*

For variable definitions, see AS.2, AS.3 and AS.15–AS.17. For related text, see S.45.

H. Health domain tables

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Introduction

H.1 This chapter presents results for the Health domain of the latest wave of the English Longitudinal Study of Ageing (ELSA). Results are presented according to six domains of health: general health, diagnosed health conditions, sensory function, physical and functional capability, cognitive function and health behaviours. As this wave also includes a nurse visit, we also present tables on anthropometric measures, physical function tests and blood biomarkers. Where possible, results are presented as follows.

- Cross-sectional tables (H1a to H8b) based on core members respondents of wave 8 (including the refreshment sample members added in 2006–07, 2008–09, 2012–13 and 2014–15). Results are classified by age (divided into five-year categories) and gender, and by gender and wealth groups (quintiles). Results are weighted for non-response using cross-sectional weight.

- Longitudinal tables (HL1a to HL11b), based on a balanced ELSA sample of core members who participated in all waves (waves 4 to 8). Results are classified by age (divided into five-year categories) and gender at wave 4, and by gender and wealth groups (quintiles) at wave 4. Results are weighted using longitudinal weight.

- Nurse visit cross-sectional tables (N1a to N9b) based on core sample member respondents of wave 8 (including the refreshment sample members added in 2006–07, 2008–09, 2012–13 and 2014–15) who then consented to the nurse visit. Results are shown by age (divided into six-year categories) and gender, and by wealth groups (quintiles) and gender. Results are weighted for non-response using two cross-sectional weights. Anthropometric and physical functioning measures are weighted by nurse visit weights, while blood samples results are weighted by blood sampling weights. Note that a number of modules included at previous ELSA nurse waves have been omitted at wave 8, including standing height, waist and hip circumference measurement, lung function, balance, leg rise, chair rise and hair sample. In addition, the weight module was moved from the nurse to the interviewer questionnaire at wave 8.

Cross-sectional tables

General health

H.2 Table H1a shows the percentage of self-rated health categories (from excellent to poor) by age and gender at wave 8. The prevalence of women reporting excellent self-rated health decreases with age and reaches the lowest value at the age of 80 and above. However, for men, the lowest value is reported at the 75–79 age group. Overall, 73% of men and 72% of women report excellent, very good or good health.

H.3 Table H1b shows the percentage of self-rated health by gender and wealth at wave 8. There is a steep economic gradient in self-rated health: men and women in the lowest wealth groups report more frequently fair or poor health than those in the highest wealth groups. Among the highest wealth group, 87% of men and 86% women rate their health good to excellent; the corresponding figures for men and women in the lowest wealth group are 50% and 54%, respectively.

H.4 Table H2a shows the percentage of people reporting a long-standing limiting illness by age and gender at wave 8. The prevalence of men and women reporting a limiting long-standing illness increases with age, from 20% in men and 26% in women aged 55–59 to 55% in men and 57% in women aged 80 and above.

H.5 Table H2b shows the percentage of limiting long-standing illness by gender and wealth at wave 8. The prevalence of men and women in the lowest wealth group reporting a long-standing limiting illness is over 50%, which is more than twice the proportion of those in the highest wealth group.

Health conditions

H.6 Table H3a shows the percentage of diagnosed health conditions by age and gender at wave 8. The same trends were observed for men and women. Overall, the prevalence of health conditions increases with age, except for cancer and respiratory illness, for which prevalence peaks at age 75–79 and lowers for people aged 80 and above, and for depression, which lowers after the age of 70. At all age groups, more men than women report coronary heart disease (CHD), while more women than men report arthritis and depression. Overall, the prevalence of chronic disease, particularly for arthritis and respiratory illnesses, is high in wave 8 of ELSA.

H.7 Table H3b shows the percentage of health conditions by gender and wealth at wave 8. The prevalence of all health conditions is lowest in the highest wealth group for both men and women. The prevalence of CHD, diabetes, depression and respiratory illnesses is approximately double in the lowest wealth group than in the highest for men, and four times higher for women. For cancer, the trend is less marked for men and, for women, prevalence is relatively stable across all wealth groups.

Sensory impairments

H.8 Table H4a shows the percentage of self-rated sensory impairments (eyesight, hearing, smell and taste) by age and gender at wave 8. Hearing impairment is highly prevalent overall (28% of men and 19% of women) and increases steadily with age from 60 onwards to reach 43% of men and 37% of women aged 80 and above. A similar trend of increase with age is observed for impairment in other senses, with the increase starting from age 65 for men and age 60 for women. In each age group, more men than women reported smell impairment, while more women report eyesight impairments than men. The lowest prevalence is for the taste impairment in both men and women (8% of men and 7% of women across all age groups).

H.9 Table H4b shows the percentage of self-rated sensory impairments by gender and wealth at wave 8. Both men and women in the lowest wealth group report higher sensory impairments in each of the eyesight, hearing, smell and taste functions than those in the highest wealth group.

Physical and functional capability

H.10 Table H5a shows the mean walking speed (m/s) by age and gender at wave 8. The mean walking speed decreases with age for both men and women and is lower in women than men within each age group. The largest difference between women (0.63 m/s) and men (0.72 m/s) is observed in the oldest age group.

H.11 Table H5b shows the mean walking speed (m/s) by gender and wealth at wave 8. The mean walking speed of men and women in the lowest wealth group is, on average, 0.25 m/s lower than that of people in the highest wealth group.

H.12 Table H6a reports the prevalence of limitations with one or more activities of daily living (ADLs) and instrumental activities of daily living (IADLs) by age and gender at wave 8. The prevalence of men and women reporting limitations with one or more ADLs and IADLs increases with age. At all ages, women are more likely to report difficulties with ADLs and IADLs than men.

H.13 Table H6b reports the prevalence of limitations with one or more ADLs and IADLs by gender and wealth at wave 8. There is a strong socio-economic gradient, with more than three times the proportion of men and women having limitations with one or more ADLs and IADLs in the lowest wealth group compared with the highest wealth group. In the lowest wealth groups, there is a gender difference in the prevalence of those reporting limitations with one or more ADLs (with higher prevalence in women than men), which is relatively attenuated in the highest quintiles of wealth. There are no significant gender differences in the prevalence of reporting limitations with one or more IADLs within each wealth group.

Cognitive function

H.14 Table H7a reports the mean cognitive performance on memory, attention and comprehension by age and gender at wave 8. Memory declines with age in both men and women, although the scores are slightly higher for women than men within each age group. A slight decline in attention capability is observed for men by age, while for women there is a stable performance in attention across the age groups. Comprehension decreases a little at older ages for both men and women.

H.15 Table H7b reports the mean cognitive function by gender and wealth at wave 8. In both men and women, all aspects of cognitive functioning – memory, attention and comprehension – are lowest in the lowest wealth group.

Health behaviours

H.16 Table H8a shows the prevalence of several health behaviours (smoking, physical activity, alcohol consumption and fruit and vegetable consumption) by age and gender at wave 8. In both men and women, the prevalence of current smokers decreases with age, while the prevalence of those being physically inactive increases with age. The peak prevalence of men and women reporting daily alcohol consumption is between the ages 70 and 74, and alcohol consumption is slightly lower at older ages. The highest prevalence of consuming five or more portions of fruit and vegetables a day is found for men and women aged 65–79.

H.17 Table H8b shows the prevalence of several health behaviours by gender and wealth at wave 8. In both men and women, the prevalence of current smokers and physical inactivity is highest in the lowest wealth groups. The prevalence of daily alcohol intake and consumption of five or more portions of fruit and vegetables is lowest in the lowest wealth group. Over a third of men and women in the lowest wealth group are physically inactive, and close to half eat fewer than five portions of fruit and vegetables a day.

Longitudinal tables

H.18 Cross-sectional tables using a series of data from different time periods combine the effect of age, time and differential mortality. For example, looking at cross-sectional data on income over time, it would not be possible to isolate the effect of age on income because the effect of time or differential mortality cannot be completely stripped out (i.e. the observation that higher-income individuals tend to live longer than lower-income individuals). Because longitudinal data follow the same individuals over time, by selecting a sample of individuals who are interviewed at every wave, we can eliminate the effect of differential mortality. The tables that follow take the set of individuals who have responded at every wave from waves 4 to 8 (the 'balanced panel') and track some health conditions by age, gender and wealth in 2008–09 (the 'baseline' years) across waves over eight years follow-up.

General health

H.19 Table HL1a shows the percentage of participants reporting fair or poor self-rated health by age and gender for waves 4 to 8. The prevalence of men and women reporting fair or poor health increases from wave 4 to wave 7, particularly in the older age group.

H.20 Table HL1b shows the percentage of participants reporting fair or poor self-rated health by gender and wealth for waves 4 to 8. The prevalence of men and women reporting fair or poor health is consistently higher for both men and women in the lowest wealth groups compared with the highest wealth groups. The increase across waves is, therefore, less steady in the lowest wealth groups, as the initial percentages are higher than in the highest wealth group, where the proportion more than doubles over time.

Health conditions

H.21 Tables HL2a and HL3a show the percentage of CHD and diabetes by age and gender for waves 4 to 8. The percentage of men and women reporting CHD and diabetes doubles from wave 4 to wave 8, particularly for older individuals.

H.22 Tables HL2b and HL3b show the percentage of CHD and diabetes by gender and wealth for waves 4 to 8. The percentage of men and women reporting CHD and diabetes is highest at every wave among individuals in the lowest wealth group.

H.23 Table HL4a shows the percentage of cancer by age and gender for waves 4 to 8. Overall, the prevalence of cancer increases from wave 4 to 8 and in all age groups, and is higher in women than men. However, trends are different according to age: women aged between 50 and 64 at baseline show a higher prevalence of cancer than men (of the same age) at every wave. It is likely that a survival effect is occurring for men aged 75–79 and for women aged 70–79 at baseline (wave 4) for whom we see a particularly low prevalence of cancer at wave 4.

H.24 Table HL4b shows the percentage of cancer by gender and wealth for waves 4 to 8. There is no marked difference in the prevalence of cancer among wealth groups.

H.25 Table HL5a reports the prevalence of diagnosed depression by age and gender in waves 4 to 8. The percentage of men and women reporting depression increases significantly from wave 4 to wave 8, and at each wave is higher in women than in men. Older men and women show consistently lower percentages of diagnosed depression than younger men and women.

H.26 Table HL5b reports the prevalence of diagnosed depression by gender and wealth in waves 4 to 8. Men and women in the highest wealth groups are less likely to be depressed, and this holds across waves.

Physical and functional capability

H.27 Table HL6a reports the mean walking speed by age and gender for waves 4 to 8. For both men and women, mean walking speed decreases from wave 4 to wave 8 in each age group, and the decline is steeper from the age of 70 onwards for women and from 75 onwards for men. At every wave, walking speed decreases with increasing age.

H.28 Table HL6b reports the mean walking speed by gender and wealth for waves 4 to 8. For both men and women, walking speed is consistently higher in the highest wealth groups.

H.29 Table HL7a reports the prevalence of participants reporting limitations with one or more ADLs by age and gender for waves 4 to 8. In both genders, the prevalence of those reporting limitations with one or more ADLs increases over time, particularly for people aged 60 and above. There is also a clear gradient by age at every wave for both men and women.

H.30 Table HL7b reports the prevalence of participants reporting limitations with one or more ADLs by gender and wealth for waves 4 to 8. In both genders, the prevalence of those reporting limitations with one or more ADLs is consistently higher by almost three times in the lowest wealth group compared with the highest wealth group at every wave for both men and women.

Cognitive function

H.31 Table HL8a reports the mean cognitive performance in memory by age and gender at waves 4 to 8. In men, the overall memory function score is almost constant over time, while for women there is a slight decrease from wave 4 to wave 8. No decline is observed in men and women aged 50–59 at baseline, while a steeper decline is observed in the older age groups 75 and above.

H.32 Table HL8b reports the mean cognitive performance in memory by gender and wealth at waves 4 to 8. For both men and women, the decrease in memory over time is more pronounced in the lowest wealth group.

Health behaviours

H.33 Table HL9a shows the prevalence of cigarette smoking by age and gender for waves 4 to 8. There is an overall linear decrease in the prevalence of smoking over time for both men and women.

H.34 Table HL9b shows the prevalence of smoking by gender and wealth for waves 4 to 8. In both genders, the proportion of smokers is much higher in the lowest wealth groups compared with highest wealth groups, and the prevalence of current smokers decreases over time in all wealth groups from wave 4 onwards.

H.35 Table HL10a shows the percentage of daily alcohol consumers by age and gender for waves 4 to 8. Overall, the percentage of alcohol consumers decreases over time, particularly from wave 4 to wave 7, and then increases slightly in wave 8. This trend is observed in most age groups.

H.36 Table HL10b shows the percentage of daily alcohol consumers by gender and wealth for waves 4 to 8. The proportion of daily alcohol consumers is much higher in the highest wealth groups compared with the lowest: twice as much in men and three times as much in women.

H.37 Table HL11a shows the prevalence of physical inactivity by age and gender for waves 4 to 8. In both genders, the percentage of those physically inactive increases over time in all the age groups, except the youngest age group 50–54, for whom the prevalence of physical inactivity remains approximately stable from wave 5 to wave 8.

H.38 Table HL11b shows the prevalence of physical inactivity by gender and wealth for waves 4 to 8. Physical inactivity increases over time in all wealth groups. At each wave, the proportion of participants reporting physical inactivity is three to five times higher in the lowest wealth group compared with the highest wealth group.

Nurse visit cross-sectional tables

Anthropometry

H.39 Tables N1a and N1b show the means and body mass index (BMI) categories by gender and age category at wave 8. The overall mean BMI in 2016–17 is similar for men (28.3 kg/m^2) and women (28.2 kg/m^2). Among men, mean BMI starts decreasing after the ages 65–69 from 29.2 to 27.2 kg/m^2 for those aged 80 and above. In women, mean BMI also decreases after ages 65–69 from 28.8 to 26.7 kg/m^2 for those aged 80 and above. Less than 1% of men and women are underweight. A third of women and just over a fifth of men have BMI in the desirable category. More men (46.5%) than women (33.5%) are overweight, and this applies to all age groups, but more women (33.7%) than men (30.7%) are obese. The very oldest groups are the least likely to be obese.

H.40 Tables N1c and N1d show mean BMI and BMI categories by wealth group and gender. The prevalence of elevated BMI and obesity is lower in the richest wealth groups.

Blood pressure

H.41 Table N2a shows mean systolic (SBP) and mean diastolic (DBP) blood pressure by age category and gender. SBP and DBP are higher among men than women. Among men, SBP increases until age 79 and then there is a small decrease, while among women there appears to be a steady increase in SBP with age. Among both men and women, increased age is associated with decreases in DBP.

H.42 Table N2b shows mean SBP and DBP by wealth category and gender. Mean levels of SBP and DBP do not show a clear pattern of association with wealth.

Lipid profile

H.43 Table N3a shows mean levels of total cholesterol, high density lipoprotein (HDL) cholesterol, low density lipoprotein (LDL) cholesterol and triglycerides by age category and gender. For each of these, the proportion of individuals reporting ‘at-risk’ values is also reported.

At every age, men have lower levels of total cholesterol than women, and among men, these levels decrease with age. Among women, there is a small decrease in the mean cholesterol levels with age. Overall, 45.6% of men and 66% of women have high total cholesterol levels (greater than 5.0 mmol/l). The gender difference in raised total cholesterol is more pronounced in the older groups because the percentage with higher cholesterol declines sharply with age for men but more gradually for women.

Mean HDL cholesterol is higher for women than for men in every age category. Overall, mean HDL cholesterol levels do not vary appreciably with age in either gender. There are 11% of men and 8.8% of women who have ‘high risk’ levels of HDL (lower than 1.0 mmol/l for men and less than 1.2 mmol/l for women), and no consistent pattern of difference with age is seen in either gender.

The mean LDL cholesterol levels are slightly lower in men (2.94 mmol/l) than in women (3.19 mmol/l). In men, LDL cholesterol concentrations decrease with age, while there is little variation with age for women. In total, 60.8% of men and 68.2% of women have elevated levels of LDL cholesterol (greater than 3.0 mmol/l). The prevalence of high LDL levels in men decreases with age (e.g. 56% of men aged 50–54 compared with 37% of men aged 75–79). In women, the prevalence of high LDL also decreases with age. Mean triglycerides concentrations are 1.20 mmol/l in women and 1.34 mmol/l in men. In men, there is a decrease in mean levels by age.

There are 32% of men and 25% of women who have elevated levels of triglycerides (greater than 1.7 mmol/l). The prevalence of high levels of triglyceride decreases with greater age in men, while the trend is not so evident among women. Note that values for LDL and triglycerides are available only for participants who provided fasting blood samples.

H.44 Table N3b shows lipid profile by wealth group and gender. Mean levels of total and LDL cholesterol show a marked socio-economic gradient that is the reverse of what might be expected. Increasing wealth is associated with higher levels of both total and LDL cholesterol. However, fewer participants who are in the highest wealth group have low levels of ‘good’ cholesterol (HDL) that would indicate increased risk. Similarly, levels of triglycerides decrease with increasing wealth.

Inflammatory markers

H.45 Table N4a shows mean concentration levels of inflammatory markers fibrinogen (g/l) and C-reactive protein (CRP) concentrations (mg/l) by age category for men and women. The mean levels of fibrinogen and CRP increase with age in both men and women.

H.46 Table N4b shows mean levels of fibrinogen and CRP by wealth group and gender. With increasing wealth, both fibrinogen and CRP levels decrease.

Glycated haemoglobin

H.47 Table N5a shows the mean glycated haemoglobin (HbA1c) levels by age and gender. There is a small increase with age in both men and women.

H.48 Table N5b shows levels of glycated haemoglobin by wealth category and gender. Glycated haemoglobin is inversely related to wealth such that wealthier participants have lower levels of HbA1c.

Haemoglobin

H.49 Table N6a shows mean haemoglobin levels and the proportion of individuals who are classified as anaemic (haemoglobin below 13g/dl for men and below 12 g/dl for women) by age category and gender. Mean levels of haemoglobin are higher in men than women. For both genders, there is a decrease in levels with age. Overall, 8.5% of men and 9.2% of women have low haemoglobin (anaemia). In both men and women, there is a clear upward shift in the prevalence of anaemia at the oldest age groups. In men, the prevalence of anaemia increases from 1% in the youngest age group to 28% in the oldest age group, with substantial differences between those aged 75 and above and those who were younger. Women show a similar pattern.

H.50 Table N6b shows mean levels of haemoglobin and the percentage of participants with anaemia in wave 8 by wealth group and gender. While mean haemoglobin levels do not differ appreciably by wealth group, the prevalence of anaemia is lower among participants in the highest wealth group.

Insulin-like growth factor-1

H.51 Table N7a shows the mean levels of insulin-like growth factor-1 (IGF-1) by age category and gender. Overall, mean levels decrease with age. The prevalence of those in the lowest quintile of levels of IGF-1 increases considerably with age in both men (from just 10.8% at 55–59 age group to 48.7% at 80 and above) and women (from 16.7% at 50–54 age group to 42.4% at 80 and above).

H.52 Table N7b shows mean levels of IGF-1 by wealth group and gender. A socio-economic gradient is evident, with increases in mean levels and decreases in the proportion of those in the lowest quintile with increased wealth.

Vitamin D

H.53 Table N8a shows the mean levels of Vitamin D by age category and gender. Overall, the mean levels of Vitamin D are similar for both men and women. There also does not appear to be a consistent pattern of change with age.

H.54 Table N8b shows mean levels of Vitamin D by wealth group and gender. A socio-economic gradient is observed, with increases in levels with increased wealth.

Grip strength

H.55 Table N9a shows mean grip strength by age category and gender. A marked gender difference in grip strength is seen, with men having much higher mean grip strength at every age. For both genders, there is a decrease in grip strength with increasing age.

H.56 Table N9b shows mean grip strength by wealth group and gender. Wealthier participants have higher mean grip strength.

Annex AH. Definitions

AH.1 *Activities of daily living (ADLs) and instrumental activities of daily living (IADLs):* Respondents were asked to report whether because of a physical, mental, emotional or memory problem they have any difficulty with ADLs (dressing, walking across a room, bathing or showering, eating, getting out of bed, using the toilet) and with IADLs (using a map, preparing a hot meal, shopping for groceries, making phone calls, taking medications, doing work around the house, managing money). From the responses to these questions, two variables were derived to indicate whether the respondent had difficulties with one or more ADLs and IADLs.

AH.2 *Age:* Defined as age at last birthday

AH.3 *Alcohol consumption:* Based on the questions concerning frequency of alcohol consumption, a variable was derived to indicate whether or not the respondent was drinking alcohol three days a week or more (which was then labelled as daily alcohol consumption).

AH.4 *Balanced panel:* The set of individuals are who interviewed in all waves of interest.

AH.5 *Baseline:* The wave of data that is chosen to be the starting point for characteristics in the longitudinal analysis that may change over time.

AH.6 *Cognitive function – attention:* This is an index that combines the scores on the cognitive test on attention and calculation (counting backward and a set of subtractions). Higher scores indicate better attention and executive functioning.

AH.7 *Cognitive function – comprehension and naming*: A score that combines the results of five questions (naming objects and people) relying on comprehension and semantic memory. Higher scores indicate better comprehension and naming capability.

AH.8 *Cognitive function – memory:* This is an overall memory score that combines the scores on the two objective memory tests (immediate and delayed memory) using a 10-word list. The overall score ranges from 0 to 20. Higher scores indicate better memory.

AH.9 *Consumption of fruit and vegetables:* Based on the questions regarding fruit and vegetable consumption, a variable was derived to indicate whether the respondent ate five or more portions of fruits and vegetables a day.

AH.10 *Health conditions:* Respondents were asked whether a doctor had ever told them that they suffered from any of the following conditions: CHD (angina or myocardial infarction), diabetes, cancer, respiratory illness (asthma or pulmonary disease), arthritis and depression.

AH.11 *Limiting long-standing illness:* Respondents were asked whether they suffered from any illness or disability that affected them over a long period and, if so, whether the illness limited their activities in some way.

AH.12 *Physical activity:* Based on the questions regarding frequency of leisure-time physical activity, a variable was derived to indicate whether or not the respondent was physically inactive (sedentary physical activity).

AH.13 *Self-rated hearing acuity*: Respondents were asked to rate their hearing, as excellent, very good, good, fair or poor. Self-rated hearing impairment was defined as having declared a fair or poor hearing.

AH.14 *Self-rated sense of smell*: Respondents were asked to rate their sense of smell as excellent, very good, good, fair or poor. Self-rated smell impairment was defined as having reported a fair or poor sense of smell.

AH.15 *Self-rated taste*: Respondents were asked to rate their sense of taste, as excellent, very good, good, fair or poor. Self-rated taste impairment was defined as having declared a fair or poor sense of taste.

AH.16 *Self-rated general health:* Respondents were asked to rate their health as excellent, very good, good, fair or poor. Because self-rated general health was collected at wave 3 using a different version, for comparability, the results from that wave are omitted from the tables.

AH.17 *Smoking status:* Defined as whether the respondent was a current smoker or not.

AH.18 *Total non-pension wealth:* Total non-pension wealth is reported at the family level and is defined as the sum of net financial wealth, net physical wealth and net housing wealth.

AH.19 *Walking speed:* A walking speed test was performed among participants aged 60 and above. The test involved timing how long it took to walk a distance of 8 feet. The total score indicates the walking speed of respondents in metres per second (m/s) with higher scores indicating faster speed.

AH.20 *Wealth groups:* To form wealth groups, we order all ELSA sample members according to the value of their total (non-pension) family wealth, and we divide the sample into five equal-sized groups. Where analysis is carried out using all ELSA sample members, the groups are equal in size and can be referred to as quintiles. Much of the analysis in this chapter is carried out using subsamples of the ELSA population. Where analysis does not use the whole ELSA sample, the groups are unequal in size and are more accurately referred to as ‘wealth groups’. For consistency reasons, we use the term ‘wealth group’ rather than ‘wealth quintile’ throughout the chapter. The cut-off points for the wealth groups are shown in the following table, reported in January 2017 prices and rounded to the nearest £1,000.

	Wealth group definition, wave 1 (2002–03)	**Wealth group definition, wave 4 (2008–09)**	**Wealth group definition, wave 8 (2016–17)**
Lowest	Less than £22k	Less than £60k	Less than £71k
2nd	Between £22k and £132k	Between £60k and £201k	Between £71k and £210k
3rd	Between £132k and £229k	Between £201k and £303k	Between £210k and £354k
4th	Between £229k and £403k	Between £303k and £496k	Between £354k and £575k
Highest	More than £403k	More than £496k	More than £575k

AH.21 *Notes to all tables*

The unit of observation in all tables is the individual.

All cross-sectional tables are based on the cross-section of ELSA sample members in each wave of data. This includes refreshment sample members.

All longitudinal tables are based on individuals who have responded in all of waves 4 to 8 (the 'balanced panel') unless otherwise specified.

All numbers are based on weighted data. Unweighted frequencies (*N*) are reported.

For cross-sectional analyses, the figures are weighted for non-response. For longitudinal analyses, the figures are weighted for non-response and attrition from wave 4 to wave 8 using longitudinal weights.

The fieldwork dates are shown in the following table.

	Fieldwork dates (inclusive)
Wave 1	March 2002 – March 2003
Wave 2	June 2004 – June 2005
Wave 3	May 2006 – August 2007
Wave 4	June 2008 – July 2009
Wave 5	July 2010 – June 2011
Wave 6	May 2012 – May 2013
Wave 7	June 2014 – May 2015
Wave 8	May 2016 – June 2017

AH.22 *The nurse visit:* All core members were eligible for a nurse visit in person (i.e. not by proxy) either in a private household or in an institution. A nurse visit was provided to only those partners who explicitly request a nurse visit. The CAPI (computer-assisted personal interview) programme was used. After the main interview, the interviewer made an appointment for the nurse to visit the respondent or set up contact between nurse and respondent. The nurse visit consisted of a series of measurements that were only obtained if the appropriate consents were obtained and the respondent was able to respond affirmatively to relevant safety questions. The nurse visit included several standard measures including: anthropometric measures, blood pressure, blood sample and lung function. Full information on all the measurements collected during the nurse visit can be found in the wave 8 technical report.

AH.23 *Height:* Height was measured using a portable stadiometer with a sliding headplate, a base plate and three connecting rods marked with a metric scale. Respondents were asked to remove their shoes. One measurement was taken with the respondent stretching to the maximum height and the head in the Frankfort plane.[51] The reading was recorded to the nearest millimetre.

AH.24 *Weight:* Weight was measured using a portable electronic scale. Respondents were asked to remove their shoes and any bulky clothing. A single measurement was recorded to the nearest 0.1 kg. Respondents who weighed more than 130 kg were asked for their estimated weights because the scales are inaccurate above this level. These estimated weights were included in the analysis.

[51] The Frankfort plane is an imaginary line passing through the external ear canal and across the top of the lower bone of the eye socket, immediately under the eye. This line must be parallel with the floor. This gives the maximum vertical distance from the floor to the highest point of the skull.

AH.25 *Body mass index (BMI):* BMI is a widely accepted measure of weight for height and is defined as weight in kilograms divided by the square of the height in metres (kg/m^2). BMI was calculated for all those respondents for whom both a valid height and weight measurement were recorded. We categorised the BMI scores into four main groups:

- underweight group (<18.5 kg/m^2);
- normal (≥18.5 and <25 kg/m^2);
- overweight (≥25 and <30 kg/m^2);
- obese (≥30 kg/m^2).

AH.26 *Blood pressure:* All respondents were eligible for the blood pressure module, except those who were pregnant. Three readings were collected at one-minute intervals (systolic, diastolic and pulse rate) using the Omron HEM-907 equipment. It was ensured that the room temperature was between 15°C and 25°C. The respondent was asked not to eat, smoke, drink alcohol or take vigorous exercise in the 30 minutes preceding the blood pressure measurement as blood pressure can be raised immediately after any of these activities. Systolic (SBP) and diastolic (DBP) blood pressure was measured using a standardised method. In adults, hypertension is defined as a SBP of at least 140 mmHg or a DBP of at least 90 mmHg or being on medication to control hypertension. The systolic arterial pressure is defined as the peak pressure in the arteries, which occurs near the beginning of the cardiac cycle. The diastolic arterial pressure is the lowest pressure at the resting phase of the cardiac cycle.

AH27. *Blood sample:* Blood samples were taken from willing ELSA core members, except those who had a clotting or bleeding disorder (e.g. haemophilia and low platelets), had ever had a fit, were not willing to give their consent in writing, were currently on anticoagulant drugs (e.g. warfarin therapy). Fasting blood samples were taken whenever possible. However, respondents aged over 80, those known to be diabetic and on treatment, those who had a clotting or bleeding disorder or were on anti-coagulant drugs (e.g. warfarin), those who had ever had fits and those who seemed frail, or the nurse was concerned about their health, were not asked to fast. Subjects were considered to have fasted if they had not had food or drink except water for a minimum of five hours prior to the blood test. The amount of blood taken from each participant in order to analyse each biomarker is presented below:

- one citrate blue tube (1.8 ml) – fibrinogen;
- one plain red tube (6 ml) – total and HDL cholesterol, triglycerides, ferritin, C-reactive protein (CRP), IGF-1 and DHEAS;
- one fluoride grey tube (2 ml) – fasting glucose;
- one EDTA light purple tube (2 ml) – haemoglobin and glycated haemoglobin;
- two EDTA dark purple tube (4 ml) – genetics.

All the blood samples were analysed at the Royal Victoria Infirmary laboratory in Newcastle.

Blood analytes
These are the blood analytes measured.

- Total cholesterol: cholesterol is a type of fat present in the blood, related to diet. Too much cholesterol in the blood increases the risk of heart disease.

- High density lipoprotein (HDL) cholesterol: this is ‘good’ cholesterol, which is protective for heart disease.
- Low density lipoprotein (LDL) cholesterol: this is the ‘bad’ cholesterol and a risk factor for cardiovascular disease.
- Triglycerides: together with total and HDL cholesterol, they provide a lipid profile that can give information on the risk of cardiovascular disease. Measures of LDL and triglycerides were only taken for participants who were asked to fast.
- Fibrinogen: a protein necessary for blood clotting. High levels are also associated with a higher risk of heart disease.
- C-reactive protein: the level of this protein in the blood gives information on inflammatory activity in the body, and it is also associated with risk of heart disease.
- Glycated haemoglobin: this indicates the presence or risk of type 2 diabetes, which is associated with an increased risk of heart disease.
- Haemoglobin: these are measures of iron levels in the body and are related to diet and other factors. Anaemia is defined as having a haemoglobin level below 13 g/dl for men and below 12 g/dl for women.
- Insulin-like growth factor 1 (IGF-1): this is a hormone that helps to control reactions to stress and to regulate various body processes including digestion, the immune system, mood and energy usage.
- Vitamin D: this is a steroid vitamin, which promotes the intestinal absorption and metabolism of calcium and phosphorus. Under normal conditions of sunlight exposure, no dietary supplementation is necessary because sunlight promotes adequate vitamin D synthesis in the skin. Deficiency can lead to bone deformity (rickets) in children and bone weakness in adults. Vitamin D comes from the diet (eggs, fish and dairy products) and is produced in the skin. Skin production of the active form of vitamin D depends on exposure to sunlight. Active people living in sunny regions produce most of the vitamin D they need from their skin. In less sunny climes, the skin production of vitamin D is markedly diminished in the winter months, especially among the elderly and the housebound. In that population, vitamin D supplements become important.

AH.28 *Grip strength:* The grip strength test is a measure of upper body strength. The test was given to all respondents who were willing to take it, with no upper or lower age limits. Participants were, however, excluded if they had swelling or inflammation, severe pain or a recent injury, or if they had had surgery to the hand in the preceding six months. If there was a problem with only one hand, measurements were taken using the other hand. After adjusting the gripometer (grip gauge) to suit the respondent’s hand and positioning the respondent correctly, the respondent was asked to squeeze the gripometer as hard as they could for a couple of seconds. Three values were recorded for each hand, starting with the non-dominant hand and alternating between hands. Any measurements carried out incorrectly were not included. The gripometer used was the ‘Smedley’s for Hand’ Dynamo Meter, with a scale ranging from 0 to 100 kg. The average of three measurements (in kilograms) is reported here.

Table H1a. Self-rated health (%), by age group and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Excellent	17.1	15.7	13.6	8.8	5.9	6.9	12.4
Very good	35.1	31.9	32.5	26.5	19.9	20.9	29.2
Good	29.2	27.2	30.6	35.2	36.9	31.8	31.2
Fair	13.7	14.4	15.7	20.3	25.1	30.4	18.6
Poor	4.9	10.9	7.6	9.1	12.2	10.1	8.6
Women							
Excellent	19.5	14.7	11.3	9.0	5.9	4.6	11.5
Very good	31.6	31.2	29.6	29.5	23.1	19.8	27.9
Good	28.1	31.5	35.2	31.3	38.2	34.4	32.7
Fair	13.5	15.8	16.6	20.5	23.7	27.7	19.1
Poor	7.2	6.8	7.3	9.7	9.1	13.5	8.8
Unweighted N							
Men	*226*	*551*	*635*	*603*	*435*	*471*	*2,921*
Women	*307*	*711*	*869*	*664*	*518*	*697*	*3,766*

For variable definitions, see AH.2, AH.16 and AH.21. For related text, see H.2

Table H1b. Self-rated health (%), by gender and wealth group: wave 8

	Wealth group in 2016–17				
	Lowest	2nd	3rd	4th	Highest
Men					
Excellent	5.6	10.9	10.9	13.1	18.5
Very good	14.7	22.4	31.0	33.8	39.7
Good	29.9	32.6	32.7	32.9	28.4
Fair	26.0	24.5	18.2	16.2	10.9
Poor	23.9	9.6	7.2	4.0	2.5
Women					
Excellent	4.7	9.3	10.7	12.9	20.6
Very good	14.4	22.1	30.0	38.2	34.6
Good	34.9	34.4	32.1	30.7	31.2
Fair	26.8	21.2	20.3	14.7	11.9
Poor	19.2	12.9	6.9	3.5	1.7
Unweighted N					
Men	*429*	*489*	*595*	*655*	*710*
Women	*656*	*764*	*789*	*744*	*741*

For variable definitions, see AH.16, AH.18, AH.20 and AH.21. For related text, see H.3.

Table H2a. Limiting long-standing illness (%), by age group and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men	19.9	28.1	30.4	35.7	44.6	55.2	33.3
Women	25.5	31.5	34.3	38.5	43.7	56.5	37.5
Unweighted N							
Men	*231*	*576*	*659*	*624*	*458*	*516*	*3,064*
Women	*316*	*726*	*888*	*680*	*535*	*759*	*3,904*

For variable definitions, see AH.2 and AH.11. For related text, see H.4.

Table H2b. Limiting long-standing illness (%), by gender and wealth group: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men	55.0	38.7	30.8	28.4	19.8
Women	55.3	44.1	34.3	29.5	24.0
Unweighted N					
Men	*455*	*519*	*621*	*678*	*733*
Women	*680*	*786*	*804*	*765*	*768*

For variable definitions, see AH.11, AH.18, AH.20 and AH.21. For related text, see H.5.

Table H3a. Diagnosed health conditions (%), by age group and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
CHD	3.9	11.0	14.5	23.0	24.6	31.6	16.1
Diabetes	8.7	15.3	15.3	19.1	21.3	17.5	15.4
Cancer	6.4	6.0	8.4	15.1	22.2	21.9	11.8
Respiratory illness	12.5	17.0	17.1	23.2	23.9	18.7	17.9
Arthritis	19.5	28.6	36.8	43.4	48.4	51.6	35.6
Depression	9.8	13.6	11.9	10.5	7.3	5.0	10.1
Women							
CHD	2.3	3.7	7.7	11.0	17.7	23.9	10.3
Diabetes	9.5	10.7	12.2	15.1	14.3	18.3	13.1
Cancer	8.1	12.2	13.4	17.8	16.7	17.3	13.8
Respiratory illness	14.4	19.3	22.4	24.0	26.6	22.2	20.9
Arthritis	30.3	44.5	55.7	60.2	63.6	70.2	52.5
Depression	16.4	16.5	16.7	16.4	12.0	7.9	14.5
Unweighted N							
Men							
CHD	*231*	*575*	*658*	*624*	*457*	*516*	*3,061*
Diabetes	*231*	*575*	*658*	*624*	*457*	*516*	*3,061*
Cancer	*231*	*576*	*659*	*624*	*456*	*517*	*3,063*
Respiratory illness	*231*	*576*	*659*	*624*	*459*	*517*	*3,066*
Arthritis	*231*	*576*	*659*	*624*	*456*	*517*	*3,063*
Depression	*231*	*576*	*659*	*624*	*459*	*517*	*3,066*
Women							
CHD	*316*	*726*	*888*	*680*	*534*	*757*	*3,901*
Diabetes	*316*	*726*	*888*	*680*	*534*	*757*	*3,901*
Cancer	*316*	*726*	*888*	*679*	*535*	*759*	*3,903*
Respiratory illness	*316*	*726*	*888*	*680*	*535*	*759*	*3,904*
Arthritis	*316*	*726*	*888*	*679*	*535*	*759*	*3,903*
Depression	*316*	*726*	*888*	*680*	*535*	*759*	*3,904*

For variable definitions, see AH.2, AH.10 and AH.21. For related text, see H.6.

Table H3b. Diagnosed health conditions (%), by gender and wealth group: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
CHD	25.8	15.2	19.6	13.8	9.6
Diabetes	23.4	16.4	13.6	14.4	11.3
Cancer	14.2	12.9	11.7	11.7	9.5
Respiratory illness	25.9	19.1	18.2	15.8	13.5
Arthritis	46.8	38.1	37.5	34.7	25.3
Depression	17.5	12.2	7.5	8.8	6.3
Women					
CHD	17.4	13.9	8.9	6.9	3.9
Diabetes	20.9	15.6	12.9	8.6	7.5
Cancer	14.6	11.5	14.8	12.7	14.9
Respiratory illness	30.9	21.1	20.6	16.9	15.0
Arthritis	66.2	56.8	51.9	46.4	42.2
Depression	19.9	15.3	15.3	12.0	10.1
Unweighted N					
Men					
CHD	*455*	*519*	*619*	*678*	*733*
Diabetes	*455*	*519*	*619*	*678*	*733*
Cancer	*454*	*519*	*622*	*678*	*732*
Respiratory illness	*455*	*519*	*622*	*678*	*734*
Arthritis	*454*	*519*	*622*	*678*	*732*
Depression	*455*	*519*	*622*	*678*	*734*
Women					
CHD	*679*	*785*	*804*	*765*	*768*
Diabetes	*679*	*785*	*804*	*765*	*768*
Cancer	*680*	*786*	*804*	*765*	*767*
Respiratory illness	*680*	*786*	*804*	*765*	*768*
Arthritis	*680*	*786*	*804*	*765*	*767*
Depression	*680*	*786*	*804*	*765*	*768*

For variable definitions, see AH.10, AH.18, AH.20 and AH.21. For related text, see H.7.

Table H4a. Self-rated sensory impairment (%), by age group and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
Eyesight impairment	7.5	10.1	8.3	10.4	17.7	24.1	11.9
Hearing impairment	21.8	20.2	24.1	32.5	34.3	42.6	27.7
Smell impairment	11.1	16.7	15.5	20.0	21.1	23.2	17.0
Taste impairment	5.2	6.4	5.9	9.2	11.0	11.6	7.6
Women							
Eyesight impairment	10.3	9.9	12.1	15.1	15.5	28.3	14.9
Hearing impairment	12.8	12.3	14.9	17.2	22.7	37.4	19.0
Smell impairment	9.4	10.0	9.8	11.9	12.5	16.4	11.5
Taste impairment	5.7	5.6	6.0	7.2	7.3	11.2	7.0
Unweighted N							
Men							
Eyesight impairment	*231*	*574*	*659*	*624*	*458*	*517*	*3,063*
Hearing impairment	*231*	*575*	*659*	*624*	*458*	*517*	*3,064*
Smell impairment	*226*	*549*	*635*	*603*	*435*	*472*	*2,920*
Taste impairment	*226*	*550*	*635*	*603*	*435*	*472*	*2,921*
Women							
Eyesight impairment	*316*	*725*	*888*	*680*	*535*	*758*	*3,902*
Hearing impairment	*316*	*725*	*888*	*680*	*535*	*759*	*3,903*
Smell impairment	*307*	*711*	*869*	*664*	*518*	*696*	*3,765*
Taste impairment	*307*	*711*	*869*	*664*	*518*	*696*	*3,765*

For variable definitions, see AH.2, AH.13–AH.15 and AH.21. For related text, see H.8.

Table H4b. Self-rated sensory impairment (%), by gender and wealth group: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Eyesight impairment	24.2	12.9	9.7	9.4	6.5
Hearing impairment	32.9	32.1	29.5	27.3	19.4
Smell impairment	17.4	19.1	19.3	15.6	14.7
Taste impairment	11.4	8.3	7.2	6.2	5.9
Women					
Eyesight impairment	27.8	17.5	13.2	9.7	6.4
Hearing impairment	28.3	21.4	19.2	12.3	14.0
Smell impairment	14.7	13.3	10.7	9.9	8.3
Taste impairment	10.1	8.5	6.2	6.1	4.0
Unweighted N					
Men					
Eyesight impairment	*455*	*519*	*621*	*677*	*733*
Hearing impairment	*455*	*519*	*621*	*678*	*733*
Smell impairment	*428*	*490*	*595*	*654*	*710*
Taste impairment	*429*	*490*	*595*	*654*	*710*
Women					
Eyesight impairment	*679*	*786*	*803*	*765*	*768*
Hearing impairment	*680*	*786*	*804*	*765*	*767*
Smell impairment	*655*	*764*	*789*	*744*	*741*
Taste impairment	*655*	*764*	*789*	*744*	*741*

For variable definitions, see AH.13–AH.15, AH.18, AH.20 and AH.21. For related text, see H.9.

Table H5a. Mean walking speed (m/s), by age group and gender: wave 8

	Age in 2016–17					All
	60–64	**65–69**	**70–74**	**75–79**	**80+**	
Men	0.96	0.93	0.88	0.82	0.72	0.88
Women	0.92	0.89	0.84	0.78	0.63	0.83
Unweighted N						
Men	*494*	*586*	*557*	*396*	*356*	*2,389*
Women	*647*	*799*	*598*	*468*	*517*	*3,029*

For variable definitions, see AH.2, AH.19 and AH.21. For related text, see H.10.

Table H5b. Mean walking speed (m/s), by gender and wealth group: wave 8

	Wealth group in 2016–17				
	Lowest	2nd	3rd	4th	Highest
Men	0.74	0.83	0.88	0.92	0.98
Women	0.69	0.78	0.83	0.88	0.94
Unweighted N					
Men	*302*	*375*	*507*	*551*	*617*
Women	*458*	*588*	*662*	*625*	*653*

For variable definitions, see AH.18–AH.21. For related text, see H.11.

Table H6a. Limitations with one or more ADLs and IADLs (%), by age group and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
ADLs	8.4	13.1	14.6	18.0	19.9	37.1	17.0
IADLs	7.7	14.3	15.4	17.8	25.2	40.6	18.3
Women							
ADLs	11.2	15.0	15.5	18.5	18.5	36.2	18.8
IADLs	12.9	18.1	17.8	22.2	28.6	52.1	24.5
Unweighted N							
Men	*231*	*576*	*659*	*624*	*459*	*517*	*3,066*
Women	*316*	*726*	*888*	*680*	*535*	*759*	*3,904*

For variable definitions, see AH.1, AH.2 and AH.21. For related text, see H.12.

Table H6b. Limitations with one or more ADLs and IADLs (%), by gender and wealth group: wave 8

	Wealth group in 2016–17				
	Lowest	2nd	3rd	4th	Highest
Men					
ADLs	33.7	20.0	15.7	11.4	9.0
IADLs	34.1	23.1	16.8	13.5	8.5
Women					
ADLs	41.3	32.5	20.3	15.6	13.3
IADLs	32.2	24.6	17.5	10.6	8.6
Unweighted N					
Men	*455*	*519*	*622*	*678*	*734*
Women	*680*	*786*	*804*	*765*	*768*

For variable definitions, see AH.1, AH.18, AH.20 and AH.21. For related text, see H.13.

Table H7a. Mean cognitive function, by age group and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
Memory	11.2	11.4	11.0	9.8	8.6	7.3	10.2
Attention	6.1	6.0	6.0	5.9	5.7	5.6	5.9
Comprehension	4.8	4.8	4.8	4.8	4.7	4.4	4.7
Women							
Memory	12.3	12.2	11.8	10.7	9.6	7.4	10.8
Attention	5.6	5.7	5.7	5.5	5.3	5.3	5.6
Comprehension	4.8	4.8	4.8	4.8	4.6	4.3	4.7
Unweighted N							
Men							
Memory	*226*	*548*	*629*	*599*	*428*	*466*	*2,896*
Attention	*213*	*531*	*604*	*575*	*404*	*422*	*2,749*
Comprehension	*225*	*537*	*619*	*584*	*416*	*444*	*2,825*
Women							
Memory	*306*	*710*	*864*	*661*	*514*	*687*	*3,742*
Attention	*289*	*668*	*796*	*599*	*448*	*595*	*3,395*
Comprehension	*300*	*695*	*854*	*643*	*494*	*659*	*3,645*

For variable definitions, see AH.2, AH.6–AH.8 and AH.21. For related text, see H.14.

Table H7b. Mean cognitive function, by age group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Memory	8.6	9.7	9.8	10.9	11.5
Attention	5.6	5.7	6.0	6.2	6.1
Comprehension	4.4	4.8	4.7	4.8	4.9
Women					
Memory	9.2	10.2	10.7	11.6	12.5
Attention	5.0	5.4	5.5	5.8	6.0
Comprehension	4.5	4.6	4.7	4.8	4.9
Unweighted N					
Men					
Memory	*426*	*488*	*587*	*649*	*703*
Attention	*366*	*462*	*553*	*635*	*691*
Comprehension	*406*	*470*	*571*	*642*	*694*
Women					
Memory	*653*	*759*	*783*	*741*	*734*
Attention	*545*	*695*	*704*	*693*	*697*
Comprehension	*623*	*737*	*760*	*727*	*727*

For variable definitions, see AH.6–AH.8, AH.18, AH.20 and AH.21. For related text, see H.15.

Table H8a. Health behaviours (%) by age group and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Current smokers	11.7	15.3	9.7	10.1	8.2	2.3	10.1
Physically inactive	8.0	11.4	11.6	14.5	23.5	39.8	16.2
Daily alcohol consumption	14.6	24.9	26.5	29.0	23.8	24.4	23.4
At least five portions of fruit and veg/day	39.5	48.4	56.9	55.5	56.1	54.5	50.9
Women							
Current smokers	14.4	14.2	11.6	9.1	7.1	3.9	10.4
Physically inactive	11.3	13.7	16.3	22.5	26.4	51.1	22.8
Daily alcohol consumption	13.5	15.0	14.1	15.7	13.1	13.7	14.2
At least five portions of fruit and veg/day	66.1	61.6	65.9	67.0	66.0	56.5	63.9
Unweighted N							
Men							
Current smokers	*231*	*576*	*657*	*623*	*459*	*516*	*3,062*
Physically inactive	*231*	*574*	*659*	*623*	*458*	*516*	*3,061*
Daily alcohol consumption	*197*	*487*	*597*	*547*	*399*	*406*	*2,633*
At least five portions of fruit and veg/day	*196*	*485*	*594*	*541*	*396*	*400*	*2,612*
Women							
Current smokers	*316*	*726*	*888*	*679*	*535*	*759*	*3,903*
Physically inactive	*316*	*721*	*887*	*679*	*534*	*759*	*3,896*
Daily alcohol consumption	*263*	*655*	*803*	*614*	*466*	*566*	*3,367*
At least five portions of fruit and veg/day	*262*	*656*	*803*	*614*	*467*	*558*	*3,360*

For variable definitions, see AH.2, AH.3, AH.9, AH.12, AH.17 and AH.21.
For related text, see H.16.

Table H8b. Health behaviours (%) by gender and wealth group: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Current smokers	26.8	10.2	8.0	4.5	4.5
Physically inactive	37.4	19.5	15.4	8.7	6.3
Daily alcohol consumption	17.9	20.4	18.6	23.4	32.1
At least five portions of fruit and veg/day	43.8	46.5	56.1	53.0	52.8
Women					
Current smokers	19.3	11.7	10.2	5.4	4.6
Physically inactive	43.4	30.6	19.6	12.6	8.0
Daily alcohol consumption	6.5	9.8	12.8	16.6	23.8
At least five portions of fruit and veg/day	51.2	60.0	64.8	65.3	75.9
Unweighted N					
Men					
Current smokers	*455*	*519*	*621*	*675*	*734*
Physically inactive	*453*	*519*	*622*	*677*	*732*
Daily alcohol consumption	*346*	*423*	*536*	*618*	*673*
At least five portions of fruit and veg/day	*343*	*422*	*526*	*615*	*669*
Women					
Current smokers	*679*	*786*	*804*	*765*	*768*
Physically inactive	*677*	*784*	*803*	*763*	*768*
Daily alcohol consumption	*537*	*667*	*717*	*700*	*695*
At least five portions of fruit and veg/day	*536*	*664*	*717*	*695*	*697*

For variable definitions, see AH.3, AH.9, AH.12, AH.17, AH.18, AH.20 and AH.21.
For related text, see H.17.

Table HL1a. Fair or poor self-rated health (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**21.1**	**21.8**	**26.8**	**26.1**	**30.3**	***2,379***
50–54	19.7	17.8	22.7	22.7	27.0	*272*
55–59	19.3	18.6	23.2	21.5	23.0	*509*
60–64	22.6	23.8	26.8	24.8	28.8	*591*
65–69	22.4	20.3	28.6	29.8	34.5	*411*
70–74	21.1	24.6	30.2	29.4	34.6	*353*
75–79	19.9	27.1	28.5	34.0	39.6	*171*
80+	27.0	32.5	43.8	35.9	50.0	*72*
Women	**23.4**	**24.9**	**26.8**	**28.6**	**29.7**	***3,019***
50–54	20.8	23.5	24.6	21.4	24.6	*341*
55–59	20.9	19.9	21.3	23.1	22.7	*660*
60–64	21.8	20.9	25.0	25.1	25.0	*728*
65–69	25.4	23.2	24.5	28.3	29.2	*507*
70–74	21.6	28.0	32.1	36.8	37.8	*446*
75–79	29.3	36.3	35.6	40.8	46.4	*214*
80+	33.9	42.1	41.4	42.2	43.7	*123*

For variable definitions, see AH.2, AH.5, AH.16 and AH.21. For related text, see H.19.

Table HL1b. Fair or poor self-rated health (%), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,330***
Lowest	46.1	45.8	53.1	49.9	53.4	*300*
2nd	28.1	30.0	34.0	37.2	36.3	*385*
3rd	16.5	16.6	23.3	22.7	29.3	*456*
4th	16.9	16.2	19.7	20.1	24.5	*537*
Highest	7.9	10.0	13.7	10.7	17.0	*652*
Women						***2,953***
Lowest	45.1	44.9	45.4	46.9	48.8	*456*
2nd	28.6	29.8	33.4	32.4	35.0	*554*
3rd	21.3	23.3	26.2	30.5	29.1	*622*
4th	17.0	16.4	18.3	20.7	21.2	*608*
Highest	8.8	13.6	14.0	15.7	17.5	*713*

For variable definitions, see AH.5, AH.16, AH.18, AH.20 and AH.21. For related text, see H.20.

Table HL2a. Diagnosed CHD (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**10.9**	**16.9**	**17.8**	**19.2**	**20.6**	***2,484***
50–54	3.2	6.9	7.1	10.1	11.5	*285*
55–59	7.0	10.2	11.2	12.3	13.6	*535*
60–64	8.4	14.5	16.0	17.6	18.8	*616*
65–69	14.1	22.5	23.6	24.7	25.8	*425*
70–74	17.5	25.0	25.2	26.2	27.6	*370*
75–79	23.5	30.0	30.4	31.7	32.3	*173*
80+	20.7	36.1	37.7	37.7	41.4	*80*
Women	**6.6**	**10.8**	**11.4**	**12.2**	**12.8**	***3,090***
50–54	0.6	2.2	2.9	3.3	3.5	*349*
55–59	1.9	4.1	4.1	4.8	5.1	*678*
60–64	4.4	7.5	7.9	9.2	9.9	*744*
65–69	8.6	13.7	14.1	15.0	15.8	*519*
70–74	9.6	17.0	19.1	20.1	21.2	*453*
75–79	17.1	25.4	25.9	25.9	25.9	*219*
80+	17.8	23.4	25.8	26.9	27.6	*128*

For variable definitions, see AH.2, AH.5, AH.10 and AH.21. For related text, see H.21.

Table HL2b. Diagnosed CHD (%), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,434***
Lowest	17.6	25.0	26.5	28.0	28.6	*318*
2nd	9.0	16.7	17.8	19.1	21.0	*403*
3rd	11.8	17.9	18.3	19.4	21.2	*477*
4th	10.5	15.8	16.8	19.0	20.6	*557*
Highest	7.4	11.5	12.3	13.3	14.1	*679*
Women						***3,024***
Lowest	11.0	17.3	18.3	19.5	20.2	*463*
2nd	8.6	13.0	13.6	14.2	14.9	*568*
3rd	6.8	11.4	12.2	13.3	14.2	*635*
4th	3.8	7.6	8.0	8.5	8.8	*626*
Highest	4.0	6.1	6.6	7.1	7.4	*732*

For variable definitions, see AH.5, AH.10, AH.18, AH.20 and AH.21. For related text, see H.22.

Table HL3a. Diagnosed diabetes (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**10.2**	**12.5**	**14.4**	**16.3**	**17.7**	***2,483***
50–54	7.8	9.0	11.6	12.8	13.8	*285*
55–59	7.0	10.7	12.7	15.0	16.5	*535*
60–64	10.2	11.6	13.7	15.3	16.6	*616*
65–69	13.1	15.4	17.5	19.9	20.7	*425*
70–74	14.8	16.7	17.4	19.3	21.0	*369*
75–79	13.4	15.9	17.5	18.3	19.5	*173*
80+	8.9	12.0	12.9	15.7	19.3	*80*
Women	**7.7**	**9.5**	**10.9**	**12.6**	**14.0**	***3,091***
50–54	4.8	6.1	7.8	8.9	10.9	*349*
55–59	5.6	6.5	7.6	9.9	11.5	*678*
60–64	8.2	10.1	11.4	12.5	13.8	*745*
65–69	6.4	8.0	8.9	10.6	12.5	*519*
70–74	10.5	13.7	14.5	16.2	17.1	*453*
75–79	12.4	15.7	20.2	22.7	23.5	*219*
80+	11.3	12.5	12.5	13.3	14.8	*128*

For variable definitions, see AH.2, AH.5, AH.10 and AH.21. For related text, see H.21.

Table HL3b. Diagnosed diabetes (%), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,433***
Lowest	13.4	18.3	21.0	22.7	24.6	*318*
2nd	10.7	13.4	16.1	18.8	21.0	*403*
3rd	10.3	12.3	12.9	15.0	15.8	*477*
4th	9.7	10.8	12.8	14.9	15.5	*556*
Highest	8.2	9.7	11.5	12.3	14.0	*679*
Women						***3,025***
Lowest	13.0	15.8	18.0	21.6	24.0	*463*
2nd	9.6	12.0	13.4	15.7	17.2	*568*
3rd	6.9	8.7	10.0	10.7	12.1	*636*
4th	7.4	8.2	9.6	11.1	12.1	*626*
Highest	2.9	4.4	5.2	6.0	7.2	*732*

For variable definitions, see AH.5, AH.10, AH.18, AH.20 and AH.21. For related text, see H.22.

Table HL4a. Diagnosed cancer (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**5.4**	**7.5**	**9.5**	**11.6**	**14.0**	***2,496***
50–54	4.0	4.3	6.3	6.5	7.4	*287*
55–59	1.6	3.0	3.7	5.6	7.7	*535*
60–64	4.4	7.0	8.1	9.6	12.1	*618*
65–69	6.2	9.1	12.8	15.5	18.7	*426*
70–74	11.1	14.8	18.1	23.7	26.9	*374*
75–79	9.9	12.9	15.1	17.3	19.7	*175*
80+	11.8	12.5	17.1	17.9	20.0	*81*
Women	**8.6**	**10.3**	**11.7**	**13.8**	**16.0**	***3,115***
50–54	5.3	6.9	7.7	7.7	10.2	*352*
55–59	7.4	8.6	10.5	13.3	15.3	*679*
60–64	8.3	10.4	11.9	14.2	16.3	*751*
65–69	11.3	13.4	14.5	16.8	18.2	*521*
70–74	9.5	11.4	12.1	14.1	16.7	*459*
75–79	6.8	8.6	10.3	13.1	13.6	*222*
80+	13.7	15.8	16.4	18.9	24.4	*131*

For variable definitions, see AH.2, AH.5, AH.10 and AH.21. For related text, see H.23.

Table HL4b. Diagnosed cancer (%), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,446***
Lowest	6.2	7.8	12.0	14.6	15.4	*318*
2nd	6.1	7.3	10.3	13.9	15.6	*407*
3rd	5.3	7.1	8.2	10.2	12.5	*479*
4th	4.2	6.6	7.5	8.7	11.7	*560*
Highest	5.8	9.2	10.6	12.3	15.5	*682*
Women						***3,049***
Lowest	7.8	8.9	10.9	13.3	15.9	*473*
2nd	8.1	9.7	10.5	12.0	14.1	*569*
3rd	9.4	11.1	12.4	14.8	16.5	*640*
4th	8.9	11.8	12.8	15.5	18.1	*631*
Highest	8.1	9.9	11.2	13.2	15.3	*736*

For variable definitions, see AH.5, AH.10, AH.18, AH.20 and AH.21. For related text, see H.24.

Table HL5a. Diagnosed depression (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**7.7**	**8.9**	**9.5**	**10.2**	**10.5**	***2,502***
50–54	8.6	11.1	12.2	13.6	13.6	*288*
55–59	10.2	11.6	11.7	12.5	13.0	*537*
60–64	8.3	9.7	10.3	10.9	11.3	*618*
65–69	8.2	9.4	10.7	11.4	11.5	*427*
70–74	4.4	4.7	6.0	6.0	6.7	*376*
75–79	0.7	0.7	0.7	0.7	0.7	*175*
80+	5.3	5.3	5.3	5.3	5.3	*81*
Women	**10.7**	**12.3**	**13.5**	**14.5**	**15.1**	***3,121***
50–54	10.9	14.2	17.2	20.0	20.8	*353*
55–59	12.0	13.9	14.9	16.2	17.0	*680*
60–64	14.4	15.7	17.1	17.4	18.1	*752*
65–69	11.4	12.5	13.8	14.6	14.8	*523*
70–74	7.2	7.8	8.6	9.1	9.5	*460*
75–79	4.7	6.2	6.2	7.5	7.5	*222*
80+	6.9	7.8	7.8	8.9	8.9	*131*

For variable definitions, see AH.2, AH.5, AH.10 and AH.21. For related text, see H.25.

Table HL5b. Diagnosed depression (%), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,452***
Lowest	13.1	15.4	16.0	17.2	18.1	*319*
2nd	7.5	8.7	9.2	9.8	9.8	*408*
3rd	6.8	7.8	9.3	10.0	10.4	*479*
4th	6.9	7.9	8.6	8.8	9.1	*562*
Highest	5.9	6.4	6.6	7.2	7.3	*684*
Women						***3,055***
Lowest	14.8	16.7	18.4	20.5	21.3	*473*
2nd	11.6	13.4	15.4	16.6	16.7	*570*
3rd	9.9	11.5	12.2	12.4	13.3	*640*
4th	8.8	10.4	11.1	12.5	12.9	*634*
Highest	8.9	9.6	10.6	11.2	11.7	*738*

For variable definitions, see AH.5, AH.10, AH.18, AH.20 and AH.21. For related text, see H.26.

Table HL6a. Walking speed (mean, m/s), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**0.99**	**0.98**	**0.97**	**0.92**	**0.87**	***1,203***
60–64	1.03	1.02	1.04	0.99	0.94	*475*
65–69	1.01	1.00	0.98	0.94	0.88	*327*
70–74	0.95	0.94	0.91	0.88	0.83	*268*
75–79	0.89	0.89	0.85	0.77	0.72	*120*
80+	0.87	0.86	0.85	0.68	0.61	*13*
Women	**0.94**	**0.93**	**0.90**	**0.85**	**0.82**	***1,480***
60–64	1.00	0.99	0.97	0.92	0.90	*578*
65–69	0.97	0.96	0.93	0.88	0.87	*390*
70–74	0.91	0.88	0.84	0.79	0.74	*336*
75–79	0.81	0.80	0.75	0.71	0.64	*136*
80+	0.75	0.73	0.63	0.58	0.54	*40*

For variable definitions, see AH.2, AH.5, AH.19 and AH.21. For related text, see H.27.

Table HL6b. Walking speed (mean, m/s), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***1,178***
Lowest	0.88	0.88	0.83	0.81	0.75	*121*
2nd	0.92	0.93	0.89	0.85	0.80	*159*
3rd	0.96	0.94	0.94	0.88	0.84	*249*
4th	1.01	0.99	0.98	0.93	0.88	*289*
Highest	1.08	1.06	1.07	1.02	0.95	*360*
Women						***1,448***
Lowest	0.82	0.80	0.76	0.72	0.70	*177*
2nd	0.88	0.88	0.84	0.82	0.78	*249*
3rd	0.94	0.92	0.89	0.83	0.79	*325*
4th	0.96	0.95	0.92	0.88	0.86	*314*
Highest	1.03	1.01	0.99	0.94	0.90	*383*

For variable definitions, see AH.5 and AH.18–AH.21. For related text, see H.28.

Table HL7a. At least one difficulty with ADL (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**14.3**	**14.4**	**15.9**	**17.2**	**20.3**	***2,500***
50–54	11.5	10.3	10.3	11.4	13.4	*287*
55–59	9.7	11.9	12.5	12.0	15.7	*536*
60–64	14.2	13.5	13.8	16.5	16.9	*618*
65–69	14.6	15.5	14.7	16.2	19.1	*427*
70–74	17.4	17.5	17.7	21.1	25.0	*376*
75–79	22.6	20.5	26.3	27.3	32.9	*175*
80+	26.8	23.9	44.7	44.8	55.7	*81*
Women	**17.1**	**17.8**	**18.9**	**19.7**	**21.1**	***3,119***
50–54	14.0	14.0	15.1	16.0	15.8	*353*
55–59	11.3	11.4	12.8	13.1	14.9	*680*
60–64	14.1	12.5	15.0	15.2	17.4	*751*
65–69	16.9	16.5	19.0	20.5	17.2	*523*
70–74	19.8	23.5	24.6	23.0	25.1	*460*
75–79	27.2	28.2	28.1	29.1	30.9	*221*
80+	36.0	42.9	38.0	44.5	54.6	*131*

For variable definitions, see AH.1, AH.2, AH.5 and AH.21. For related text, see H.29.

Table HL7b. At least one difficulty with ADL (%), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,450***
Lowest	30.0	26.1	28.5	29.3	37.1	*319*
2nd	14.8	17.9	17.0	17.9	23.1	*407*
3rd	10.7	13.4	15.2	15.9	17.1	*479*
4th	10.8	12.1	13.9	15.1	17.6	*562*
Highest	9.9	7.3	9.4	11.3	12.1	*683*
Women						***3,053***
Lowest	35.4	33.5	31.9	34.9	35.2	*473*
2nd	19.5	22.6	22.6	24.9	27.8	*570*
3rd	15.4	15.9	19.2	18.3	19.4	*640*
4th	10.5	11.1	13.8	13.2	14.5	*632*
Highest	7.1	8.4	9.3	9.7	11.5	*738*

For variable definitions, see AH.1, AH.5, AH.18, AH.20 and AH.21.
For related text, see H.30.

Table HL8a. Mean memory score, by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**10.8**	**10.7**	**10.8**	**10.3**	**10.0**	***2,356***
50–54	11.5	11.7	11.8	11.6	11.6	*271*
55–59	11.7	11.5	11.9	11.7	11.5	*509*
60–64	11.2	11.1	11.3	10.8	10.6	*582*
65–69	10.3	10.4	10.2	9.6	9.2	*404*
70–74	9.8	9.5	9.6	8.9	8.5	*351*
75–79	9.6	9.4	9.2	8.2	7.8	*167*
80+	8.5	8.3	8.2	6.8	6.3	*72*
Women	**11.5**	**11.4**	**11.4**	**11.0**	**10.8**	***2,989***
50–54	12.3	12.3	12.9	12.5	12.6	*340*
55–59	12.2	12.3	12.5	12.2	12.2	*658*
60–64	12.1	12.1	12.2	11.7	11.6	*720*
65–69	11.2	11.1	10.9	10.7	10.4	*502*
70–74	10.6	10.5	10.3	9.8	9.2	*437*
75–79	9.6	9.5	9.1	8.1	7.7	*212*
80+	9.0	8.3	8.1	7.2	6.3	*120*

For variable definitions, see AH.2, AH.5, AH.8 and AH.21. For related text, see H.31.

Table HL8b. Mean memory score, by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,306***
Lowest	9.6	9.9	9.6	8.9	8.7	*297*
2nd	10.2	10.0	10.3	9.8	9.4	*384*
3rd	10.4	10.4	10.4	9.9	9.6	*451*
4th	11.1	11.0	11.3	10.6	10.4	*529*
Highest	11.6	11.5	11.5	11.2	11.0	*645*
Women						***2,924***
Lowest	10.2	10.2	10.1	9.4	9.3	*453*
2nd	10.9	10.8	11.0	10.5	10.1	*549*
3rd	11.3	11.3	11.3	10.9	10.7	*618*
4th	11.9	11.9	11.9	11.5	11.2	*599*
Highest	12.4	12.3	12.3	12.0	12.0	*705*

For variable definitions, see AH.5, AH.8, AH.18, AH.20 and AH.21. For related text, see H.32.

Table HL9a. Current smoker (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	Unwted N
Men	**14.5**	**13.4**	**12.2**	**10.9**	**9.9**	***2,445***
50–54	20.4	17.9	18.9	16.5	15.5	*283*
55–59	18.9	18.1	16.0	14.5	12.1	*524*
60–64	16.8	15.1	13.3	13.1	11.8	*602*
65–69	11.5	10.7	9.5	7.1	7.5	*421*
70–74	9.6	8.4	7.4	5.9	6.7	*364*
75–79	3.9	4.0	3.0	3.5	2.4	*174*
80+	1.0	1.0	1.0	0.0	0.0	*77*
Women	**13.9**	**13.0**	**11.5**	**10.6**	**9.6**	***3,040***
50–54	23.2	21.9	20.9	17.6	16.4	*346*
55–59	17.3	16.3	14.4	13.2	12.8	*667*
60–64	14.7	12.7	12.0	11.1	9.6	*731*
65–69	11.5	11.0	9.5	8.3	7.8	*513*
70–74	8.6	7.6	6.8	6.5	5.3	*439*
75–79	9.6	10.3	7.0	8.3	6.5	*216*
80+	3.6	3.6	1.8	2.9	1.8	*128*

For variable definitions, see AH.2, AH.5, AH.17 and AH.21. For related text, see H.33.

Table HL9b. Current smoker (%), by gender and wealth: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	Unwted N
Men						***2,411***
Lowest	36.0	34.3	29.4	28.3	27.4	*313*
2nd	14.9	13.0	11.3	8.4	7.7	*401*
3rd	11.6	10.9	11.5	9.0	8.4	*475*
4th	8.1	6.9	7.1	6.0	5.6	*553*
Highest	7.2	6.5	5.5	6.1	4.2	*669*
Women						***2,975***
Lowest	24.2	23.7	21.6	20.6	18.6	*456*
2nd	17.7	16.0	13.7	12.6	10.4	*560*
3rd	14.6	13.3	12.0	10.4	10.0	*627*
4th	7.7	7.2	5.8	5.4	5.3	*612*
Highest	7.0	6.5	5.6	5.1	4.7	*720*

For variable definitions, see AH.5, AH.17, AH.18, AH.20 and AH.21. For related text, see H.34.

Table HL10a. Daily alcohol consumer (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**28.3**	**26.4**	**25.9**	**24.8**	**26.1**	***1,769***
50–54	24.9	20.7	20.3	16.9	19.1	*186*
55–59	23.3	27.2	25.9	23.5	25.8	*383*
60–64	33.1	31.9	30.5	31.0	30.5	*449*
65–69	31.1	27.5	27.8	28.4	27.9	*322*
70–74	26.5	21.1	23.4	20.6	21.7	*269*
75–79	36.3	27.0	25.9	27.0	31.6	*111*
80+	25.7	18.3	18.1	19.8	23.0	*49*
Women	**17.5**	**16.9**	**16.2**	**14.5**	**14.9**	***2,253***
50–54	18.3	16.3	15.2	15.1	13.4	*248*
55–59	16.4	18.1	17.4	15.1	15.9	*503*
60–64	17.1	17.8	17.2	15.7	15.8	*578*
65–69	18.3	16.6	17.9	14.7	14.7	*401*
70–74	17.6	15.9	13.8	13.2	12.2	*327*
75–79	19.4	16.1	15.6	15.7	17.0	*128*
80+	17.8	12.5	8.4	5.1	13.4	*68*

For variable definitions, see AH.2, AH.3, AH.5 and AH.21. For related text, see H.35.

Table HL10b. Daily alcohol consumer (%), by wealth and gender: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***1,744***
Lowest	20.4	18.4	17.8	14.8	15.0	*173*
2nd	20.6	19.1	18.8	18.7	22.3	*263*
3rd	24.3	21.3	20.2	19.3	19.7	*353*
4th	28.8	26.3	26.1	26.2	27.4	*429*
Highest	38.6	38.2	37.9	35.9	36.7	*526*
Women						***2,207***
Lowest	8.1	7.6	7.6	6.3	6.8	*274*
2nd	9.0	8.5	7.2	9.4	8.6	*387*
3rd	14.1	12.9	11.3	10.6	10.0	*487*
4th	21.2	18.8	18.3	15.2	16.6	*468*
Highest	28.3	29.9	29.7	24.9	26.4	*591*

For variable definitions, see AH.3, AH.5, AH.18, AH.20 and AH.21. For related text, see H.36.

Table HL11a. Physical inactivity (%), by age and gender: waves 4 to 8

Age in 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men	**9.6**	**11.6**	**12.5**	**15.2**	**19.3**	***2,499***
50–54	5.5	9.0	8.4	11.9	10.1	*287*
55–59	7.7	8.4	9.1	10.1	12.5	*536*
60–64	10.0	11.3	11.4	14.2	14.7	*617*
65–69	12.0	12.0	15.1	14.6	20.4	*427*
70–74	11.3	15.0	13.8	19.1	26.5	*376*
75–79	9.7	17.3	14.3	21.8	37.0	*175*
80+	18.8	19.2	33.9	39.8	56.3	*81*
Women	**17.7**	**17.4**	**19.9**	**22.9**	**26.3**	***3,113***
50–54	12.0	13.3	14.7	17.1	13.7	*352*
55–59	13.9	10.7	13.2	13.1	16.5	*679*
60–64	10.1	12.1	12.9	15.6	18.4	*748*
65–69	16.6	15.9	18.8	20.3	25.0	*523*
70–74	19.6	21.3	22.7	27.5	33.6	*458*
75–79	33.0	34.7	34.6	43.6	47.4	*222*
80+	44.8	38.7	54.1	63.1	70.6	*131*

For variable definitions, see AH.2, AH.5, AH.12 and AH.21. For related text, see H.37.

Table HL11b. Physical inactivity (%), by wealth and gender: waves 4 to 8

Wealth group 2008–09	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	*Unwted N*
Men						***2,449***
Lowest	21.2	29.1	26.6	32.8	36.6	*319*
2nd	14.0	14.0	20.1	21.8	24.6	*407*
3rd	7.1	8.3	9.1	13.0	16.7	*479*
4th	5.0	7.1	6.3	9.6	13.5	*561*
Highest	4.7	5.2	6.2	5.5	11.4	*683*
Women						***3,047***
Lowest	35.9	34.9	35.3	44.2	47.1	*472*
2nd	21.1	24.1	27.8	27.7	33.3	*567*
3rd	16.2	13.4	18.9	23.0	25.6	*639*
4th	9.1	9.0	10.5	13.8	17.0	*632*
Highest	9.3	8.3	9.5	9.4	12.0	*737*

For variable definitions, see AH.5, AH.12, AH.18, AH.20 and AH.21. For related text, see H.38.

Table N1a. Mean body mass index (kg/m^2), by age and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men	28.3	28.4	29.2	28.2	28.3	27.2	28.3
Women	28.7	28.6	28.8	28.1	28.0	26.7	28.2
Unweighted N							
Men	*174*	*256*	*298*	*279*	*216*	*266*	*1,489*
Women	*239*	*308*	*397*	*311*	*254*	*343*	*1,852*

For variable definitions, see AH.21 and AH.25. For related text, see H.39.

Table N1b. Body mass index categories (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
Underweight	0.6	0.3	0.7	0.4	0.6	0.5	0.5
Desirable	18.9	24.2	16.3	25.4	22.8	30.0	22.3
Overweight	55.3	40.7	44.8	41.8	46.7	48.5	46.5
Obese	25.1	34.8	38.2	32.4	29.9	21.0	30.7
Women							
Underweight	0.0	0.6	0.9	0.8	0.0	4.0	1.1
Desirable	35.2	31.7	29.6	28.5	31.8	33.2	31.8
Overweight	26.5	30.7	32.6	38.5	38.4	38.3	33.5
Obese	38.4	36.9	36.9	32.3	29.8	24.5	33.7
Unweighted N							
Men	*173*	*256*	*298*	*278*	*216*	*266*	*1,487*
Women	*238*	*307*	*397*	*311*	*253*	*341*	*1,847*

Note: Underweight indicates BMI < 18.5, desirable indicates BMI from 18.5 to 24.9, overweight indicates BMI from 25 to 29.9 and obese indicates BMI of 30 or more.

For variable definitions, see AH.21 and AH.25. For related text, see H.39.

Table N1c. Body mass index (kg/m^2) means, by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men	29.4	29.2	28.6	27.9	27.4
Women	29.7	28.4	28.9	27.5	26.2
Unweighted N					
Men	*180*	*256*	*335*	*348*	*367*
Women	*276*	*368*	*415*	*396*	*379*

For variable definitions, see AH.21 and AH.25. For related text, see H.40.

Table N1d. Body mass index categories (%), by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Underweight	1.6	0.3	0.3	0.6	0.0
Desirable	20.9	20.6	16.8	22.7	27.5
Overweight	30.4	39.2	54.4	52.9	49.9
Obese	47.0	39.9	28.5	23.8	22.7
Women					
Underweight	0.9	2.0	0.5	0.6	1.0
Desirable	21.1	27.4	28.6	37.6	45.4
Overweight	33.0	38.1	32.5	30.9	34.2
Obese	45.0	32.5	38.4	30.9	19.5
Unweighted N					
Men	*180*	*256*	*335*	*348*	*365*
Women	*276*	*368*	*414*	*394*	*377*

Note: Underweight indicates BMI < 18.5, desirable indicates BMI from 18.5 to 24.9, overweight indicates BMI from 25 to 29.9 and obese indicates BMI 30 or more.

For variable definitions, see AH.21 and AH.25. For related text, see H.40.

Table N2a. Means of systolic and diastolic blood pressure (mmHg), by age and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
Systolic BP	128.2	132.2	133.6	133.1	134.7	129.8	131.7
Diastolic BP	78.9	75.8	74.5	71.9	69.5	64.3	73.4
Women							
Systolic BP	125.0	129.0	131.0	133.3	135.0	134.5	130.8
Diastolic BP	76.6	75.5	72.5	71.8	69.6	66.5	72.4
Unweighted N							
Men	*169*	*246*	*289*	*270*	*211*	*266*	*1,451*
Women	*229*	*302*	*384*	*300*	*249*	*341*	*1,805*

For variable definitions, see AH.21 and AH.26. For related text, see H.41.

Table N2b. Means of systolic and diastolic blood pressure (mmHg), by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Mean Systolic BP	129.8	133.6	131.9	131.7	130.4
Mean Diastolic BP	72.2	73.8	73.1	73.9	73.7
Women					
Mean Systolic BP	131.8	131.0	132.3	129.7	128.1
Mean Diastolic BP	72.2	71.6	72.9	72.9	72.3
Unweighted N					
Men	*162*	*248*	*333*	*351*	*355*
Women	*268*	*268*	*268*	*268*	*268*

For variable definitions, see AH.21 and AH.26. For related text, see H.42.

Table N3a. Lipid profile (mmol/l), by age and gender: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men							
Mean total cholesterol	5.23	5.16	4.95	4.70	4.49	4.46	4.90
% ≥ 5.0 mmol/l Chol	58.1	54.9	44.5	38.0	30.1	34.8	45.6
Mean HDL cholesterol	1.34	1.43	1.47	1.47	1.44	1.38	1.42
% < 1.0 mmol/l HDL	12.6	9.4	11.4	7.8	9.6	14.6	10.9
Mean LDL cholesterol	3.16	3.07	2.88	2.78	2.59	–	2.94
% ≥ 3.0 mmol/l LDL	56.3	52.5	43.2	41.0	37.3	–	47.4
Mean triglycerides[a]	1.88	1.44	1.54	1.32	1.37	–	1.55
% ≥ 1.7 mmol/l Trig	44.8	30.3	31.6	18.7	25.0	–	31.8
Women							
Mean total cholesterol	5.76	5.74	5.39	5.39	5.09	4.93	5.42
% ≥ 5.0 mmol/l Chol	82.3	77.7	66.2	61.8	47.5	50.0	66.0
Mean HDL cholesterol	1.79	1.76	1.72	1.67	1.75	1.72	1.74
% < 1.2 mmol/l HDL	7.1	9.9	8.8	9.3	7.5	10.3	8.8
Mean LDL cholesterol	3.35	3.40	3.10	3.17	2.76	–	3.19
% ≥ 3.0 mmol/l LDL	65.5	67.6	56.4	55.7	35.8	–	58.3
Mean triglycerides[a]	1.44	1.38	1.36	1.43	1.31	–	1.39
% ≥ 1.7 mmol/l Trig	26.8	25.1	23.3	29.1	18.9	–	25.1
Unweighted N							
Men							
Total cholesterol	*156*	*219*	*242*	*224*	*157*	*181*	*1,179*
HDL cholesterol	*156*	*219*	*241*	*224*	*157*	*181*	*1,178*
LDL cholesterol	*107*	*152*	*187*	*159*	*107*	–	*712*
Triglycerides	*113*	*156*	*190*	*159*	*107*	–	*725*
Women							
Total cholesterol	*211*	*259*	*335*	*249*	*204*	*221*	*1,479*
HDL cholesterol	*211*	*259*	*336*	*249*	*204*	*221*	*1,480*
LDL cholesterol	*148*	*201*	*263*	*193*	*144*	–	*949*
Triglycerides	*149*	*202*	*266*	*193*	*144*	–	*954*

Note: Triglycerides and LDL cholesterol measurements were carried out on those who are eligible to fast according to the protocol. Chol indicates total cholesterol, HDL indicates HDL cholesterol, LDL indicates LDL cholesterol and Trig indicates triglycerides.

[a]Geometric means are reported.

For variable definitions, see AH.21 and AH.27. For related text, see H.43.

Table N3b. Lipid profile (mmol/l), by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Mean total cholesterol	4.61	4.89	4.84	5.05	5.06
% ≥ 5.0 mmol/l Chol	32.0	46.7	43.8	52.9	50.2
Mean HDL cholesterol	1.28	1.36	1.41	1.46	1.53
% < 1.0 mmol/l HDL	19.8	12.8	9.2	8.3	6.0
Mean LDL cholesterol	2.76	2.89	2.89	3.03	3.01
% ≥ 3.0 mmol/l LDL	35.6	40.7	44.4	57.8	49.5
Mean triglycerides[a]	1.8	1.8	1.5	1.5	1.3
% ≥ 1.7 mmol/l Trig	51.5	41.4	34.9	26.1	21.0
Women					
Mean total cholesterol	5.09	5.36	5.44	5.58	5.60
% ≥ 5.0 mmol/l Chol	54.9	64.1	64.2	72.6	76.2
Mean HDL cholesterol	1.61	1.71	1.70	1.83	1.90
% < 1.2 mmol/l HDL	9.8	9.5	11.1	5.6	5.0
Mean LDL cholesterol	3.05	3.10	3.26	3.28	3.23
% ≥ 3.0 mmol/l LDL	56.1	54.7	56.8	63.5	61.2
Mean triglycerides[a]	1.5	1.5	1.5	1.2	1.1
% ≥ 1.7 mmol/l Trig	33.8	25.8	29.9	21.2	10.2
Unweighted N					
Men					
Total cholesterol	*134*	*193*	*274*	*277*	*296*
HDL cholesterol	*134*	*193*	*274*	*277*	*296*
LDL cholesterol	*63*	*108*	*167*	*180*	*195*
Triglycerides	*64*	*111*	*168*	*183*	*198*
Women					
Total cholesterol	*210*	*286*	*331*	*332*	*309*
HDL cholesterol	*210*	*286*	*331*	*332*	*309*
LDL cholesterol	*113*	*190*	*205*	*223*	*214*
Triglycerides	*113*	*191*	*207*	*223*	*215*

Note: Triglycerides and LDL cholesterol measurements were carried out on those who are eligible to fast according to the protocol. Chol indicates total cholesterol, HDL indicates HDL cholesterol, LDL indicates LDL cholesterol and Trig indicates triglycerides.

[a]Geometric means are reported.

For variable definitions, see AH.21 and AH.27. For related text, see H.44.

Table N4a. Fibrinogen (g/l) and C-reactive protein (mg/l) means, by age and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
Mean fibrinogen	3.17	3.21	3.28	3.35	3.45	3.41	3.29
Mean C-reactive protein[a]	1.16	1.00	1.26	1.26	1.39	1.62	1.23
Women							
Mean fibrinogen	3.28	3.28	3.32	3.41	3.47	3.35	3.34
Mean C-reactive protein[a]	1.36	1.44	1.38	1.44	1.48	1.52	1.43
Unweighted N							
Fibrinogen							
Men	*142*	*203*	*216*	*199*	*137*	*159*	*1,056*
Women	*190*	*229*	*299*	*225*	*178*	*198*	*1,319*
C-reactive protein							
Men	*151*	*210*	*235*	*210*	*147*	*165*	*1,118*
Women	*197*	*249*	*319*	*241*	*199*	*211*	*1,416*

[a]Geometric means are reported. Participants with levels greater than 10 mg/l were excluded.

For variable definitions, see AH.21 and AH.27. For related text, see H.45.

Table N4b. Fibrinogen (g/l) and C-reactive protein (mg/l) means, by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Mean fibrinogen	3.47	3.31	3.40	3.18	3.12
Mean C-reactive protein[a]	1.81	1.35	1.34	1.12	0.90
Women					
Mean fibrinogen	3.38	3.38	3.37	3.28	3.25
Mean C-reactive protein[a]	1.88	1.45	1.49	1.25	1.13
Unweighted N					
Fibrinogen					
Men	*122*	*175*	*241*	*248*	*266*
Women	*189*	*253*	*294*	*299*	*273*
C-reactive protein					
Men	*122*	*179*	*260*	*265*	*289*
Women	*199*	*275*	*318*	*313*	*299*

[a]Geometric means are reported. Participants with levels greater than 10 mg/l were excluded.

For variable definitions, see AH.21 and AH.27. For related text, see H.46.

Table N5a. Glycated haemoglobin (%) means, by gender and age: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men	5.69	5.68	5.76	5.89	5.84	5.96	5.78
Women	5.72	5.75	5.76	5.80	5.91	5.78	5.78
Unweighted N							
Men	*153*	*219*	*242*	*221*	*157*	*184*	*1,176*
Women	*208*	*262*	*333*	*247*	*202*	*225*	*1,477*

For variable definitions, see AH.21 and AH.27. For related text, see H.47.

Table N5b. Glycated haemoglobin (%) means, by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men	6.00	5.63	5.79	5.76	5.74
Women	5.96	5.78	5.78	5.68	5.66
Unweighted N					
Men	*132*	*194*	*273*	*278*	*296*
Women	*210*	*289*	*327*	*335*	*304*

For variable definitions, see AH.21 and AH.27. For related text, see H.48.

Table N6a. Mean haemoglobin (g/dl) and anaemia (%), by age and gender: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
Mean haemoglobin (g/dl)	15.3	14.9	14.9	14.8	14.2	13.6	14.7
Anaemia (%)	1.1	3.5	3.3	5.8	21.5	28.3	8.5
Women							
Mean haemoglobin (g/dl)	13.5	13.5	13.4	13.4	13.2	13.0	13.3
Anaemia (%)	3.3	6.6	7.9	8.6	9.0	21.4	9.2
Unweighted N							
Men	*153*	*215*	*241*	*219*	*155*	*179*	*1,162*
Women	*208*	*259*	*326*	*243*	*198*	*221*	*1,455*

Note: Anaemia defined as haemoglobin level below 13g/dl for men and below 12 g/dl for women.

For variable definitions, see AH.21 and AH.27. For related text, see H.49.

Table N6b. Mean haemoglobin (g/dl) and anaemia prevalence, by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Haemoglobin (g/dl)					
Men	14.7	14.8	14.7	14.8	14.7
Women	13.0	13.4	13.5	13.4	13.4
Anaemia (%)					
Men	9.8	8.7	11.5	5.4	6.7
Women	17.8	7.8	7.8	6.3	5.2
Unweighted N					
Men	*131*	*188*	*270*	*275*	*295*
Women	*209*	*279*	*325*	*331*	*299*

Note: Anaemia defined as haemoglobin level below 13g/dl for men and below 12 g/dl for women.

For variable definitions, see AH.21 and AH.27. For related text, see H.50.

Table N7a. Mean levels of IGF-1 (nmol/l), by gender and age: wave 8

	Age in 2016–17						All
	55–59	**60–64**	**65–69**	**70–74**	**75–79**	**80+**	
Men							
Mean IGF-1	17.5	16.3	15.8	15.2	14.6	12.9	15.7
% in lowest quintile	10.8	18.3	27.2	32.8	31.1	48.7	26.0
Women							
Mean IGF-1	14.7	14.4	13.4	13.4	12.9	11.8	13.5
% in lowest quintile	16.7	16.2	23.4	23.0	31.3	42.4	24.7
Unweighted N							
Men	*155*	*218*	*241*	*224*	*156*	*181*	*1,175*
Women	*211*	*258*	*335*	*249*	*204*	*221*	*1,478*

Note: Gender-specific quintiles used.

For variable definitions, see AH.21 and AH.27. For related text, see H.51.

Table N7b. Mean levels of IGF-1 (nmol/l), by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	**2nd**	**3rd**	**4th**	**Highest**
Men					
Mean IGF-1	14.93	15.40	15.72	16.19	16.10
% in lowest quintile	34.3	27.9	25.1	24.3	18.8
Women					
Mean IGF-1	12.80	13.34	13.53	14.08	13.86
% in lowest quintile	30.8	24.9	26.3	20.6	21.3
Unweighted N					
Men	*134*	*192*	*272*	*278*	*295*
Women	*210*	*285*	*330*	*332*	*309*

Note: Gender-specific quintiles used.

For variable definitions, see AH.21 and AH.27. For related text, see H.52.

Table N8a. Mean levels of vitamin D (nmol/l), by gender and age: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men	44.0	44.4	49.3	45.9	49.5	42.9	45.9
Women	45.2	46.0	49.9	45.6	50.4	44.4	46.8
Unweighted N							
Men	*154*	*218*	*241*	*223*	*155*	*180*	*1,171*
Women	*207*	*256*	*332*	*248*	*200*	*220*	*1,463*

For variable definitions, see AH.21 and AH.27. For related text, see H.53.

Table N8b. Mean levels of vitamin D (nmol/l), by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	2nd	3rd	4th	Highest
Men	39.4	43.3	48.1	46.5	49.3
Women	43.9	43.9	44.6	52.8	50.1
Unweighted N					
Men	*134*	*192*	*270*	*276*	*295*
Women	*207*	*282*	*328*	*330*	*304*

For variable definitions, see AH.21 and AH.27. For related text, see H.54.

Table N9a. Mean grip strength (kilograms), by gender and age: wave 8

	Age in 2016–17						All
	55–59	60–64	65–69	70–74	75–79	80+	
Men	42	40	39	35	32	28	37
Women	25	24	22	21	19	16	22
Unweighted N							
Men	*178*	*257*	*297*	*277*	*219*	*272*	*1,500*
Women	*244*	*306*	*393*	*299*	*252*	*344*	*1,838*

For variable definitions, see AH.21 and AH.28. For related text, see H.55.

Table N9b. Mean grip strength (kilograms), by wealth group and gender: wave 8

	Wealth group in 2016–17				
	Lowest	2nd	3rd	4th	Highest
Men	34	37	37	38	40
Women	20	21	22	23	24
Unweighted N					
Men	*176*	*257*	*343*	*354*	*367*
Women	*266*	*362*	*422*	*395*	*376*

For variable definitions, see AH.21 and AH.28. For related text, see H.56.