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Planning and Preparing for Later Life 2024: Technical Report

July 2025

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Author details

This report was produced by Sarah Butt, Amy Dyer, Sinead Palmer and Christos Byron.

1 Introduction

The Planning and Preparing for Later Life Survey (PPLL) 2024 was commissioned by the Department for Work and Pensions (DWP) to provide up to date information on people's attitudes and behaviours around planning for retirement. It is the second in the survey series, following on from the first wave of PPLL conducted in 2020/21.

The 2024 survey had four main objectives:

- To understand attitudes and behaviours around pension saving and planning for later life
- To provide evidence to support policy development around income adequacy in retirement
- To gather evidence on attitudes and knowledge around the State Pension system
- To gather evidence on the value consumers place on DWP products and policies

The Planning and Preparing for Later Life survey collected data from a nationally representative sample of 4,036 adults aged 40 to 75 in Great Britain. Data were collected via a 45 minute online self-completion survey (with the option to complete via the telephone on request) between 28th October and 7th December 2024.

The sample for the survey was drawn from respondents to the 2022-23 and 2023-24 Family Resources Surveys aged 40 to 75 who had agreed to be contacted for further research.

The data have been weighted to ensure that findings can be generalised to the population of 40 to 75 year olds in Great Britain. The final data have been calibrated against ONS mid-year population estimates to ensure that they closely resembled the target population in terms of sex, age and region.

Comparisons with PPLL Wave 1

Some of the questions in PPLL 2024 were also asked in 2020/21 (PPLL Wave 1), allowing for comparisons to be made between the two time points. The questionnaire in Annex A is colour coded to indicate repeat questions.

While most aspects of the study design (including the population of interest and the sampling and weighting methodology) are consistent across the two survey waves, it should be borne in mind that the mode of data collection changed. At Wave 1 the survey was telephone-only while at Wave 2 it was web-first with the option of telephone completion. The approach taken to adapting the questionnaire for web was intended to maintain comparability with Wave 1 wherever possible (see Chapter 3) and the change in mode should not preclude time series analysis. However, data analysts wishing to make comparisons over time should consider whether the

change in survey mode may have impacted on the pattern of responses to particular questions, for example those which had additional “hidden” codes which were not read out to respondents on the telephone but were visible to web respondents.

Further information

Findings from the 2024 survey are available along with a separate report looking at [people’s willingness to pay for pension products and services](#).

Data from the 2020/21 and 2024 surveys are publicly available via the [UK Data Service](#).

2 Sampling

The target population for PPLL was 40 to 75 year olds living in Great Britain.

Sample design

The sample design for Wave 2 of PPLL was very similar to that used at Wave 1 and again made use of the Department for Work and Pension's (DWP) Family Resources Survey (FRS). The sample was taken from two years of FRS to provide sufficient cases. In total, 14,069 individuals were invited to take part in PPLL Wave 2.

The FRS is a continuous household survey conducted by DWP and reporting annually which collects information on household income and expenditure from a representative sample of private households in the United Kingdom. The original sample is drawn from the Postcode Address File. All adults in selected household are interviewed as part of the study. Participants are asked at the end of the FRS interview whether they are interested in taking part in further research, allowing DWP to create samples for future research projects ([Family Resources Survey - GOV.UK](https://www.gov.uk/government/collections/family-resources-survey)).

FRS 2022-23

The sampling frame was composed of all households in Great Britain containing at least one eligible person, that is aged 40-75 and consenting to be re-contacted for future research.¹

All households in the sampling frame were sorted by (a) region, (b) age group of the household reference person, (c) household type, (d) economic status, and (e) household income. A stratified random sample of 7,949 households was selected (using a random start and a fixed interval).

All eligible people in households with one or two eligible individuals were selected. In households containing three or more eligible people, two were selected at random. A total of 9,436 individuals were selected.

It was not possible to use all eligible households from FRS 2022-23 as some cases were needed to provide sample for another survey.

FRS 2023-24 (April – September 2023)

All 3,924 households in Great Britain for which data were available at the time the PPLL sample was drawn and containing at least one eligible person were selected.

¹ Age eligibility was determined based on Date of Birth with people born between 1st July 1948 and 30th June 1984 included in the sample.

All eligible people in households with one or two eligible individuals were selected. In households containing three or more eligible people, two were selected at random. A total of 4,633 individuals were selected.

Sample management

The sample was drawn by DWP researchers using a specification provided by NatCen. The FRS serial numbers of sampled cases – along with some basic demographic information collected as part of the FRS interview - were then passed to the team at the Office for National Statistics (ONS) responsible for conducting FRS fieldwork and who retain contact details for sample members. They appended name, address and email address to the file before making it available to the PPLL research team at NatCen.

One advantage of sampling respondents from a previous survey is that it is possible to make use of information collected during the initial FRS interview. Feed forward information was used in PPLL in various ways.

- Information on gender and ethnicity - things which were not expected to change for the age group in question – were carried over from FRS into the final PPLL dataset to avoid the need to re-ask this.
- FRS information on region and age was carried over from FRS but rechecked during the PPLL Interview. Region was checked because this may change if people move house and age given the importance of this variable to the survey.
- Information on household composition, including income, was used for weighting purposes (see Chapter 7 for more details).

The final PPLL sample file prepared by NatCen replaced the FRS serial number with a newly created PPLL serial number so that it was not possible to link the PPLL and FRS datasets (something for which respondents' consent was not sought).

3 Questionnaire development

The PPLL questionnaire was developed in consultation between NatCen and DWP, with input from subject experts at WPI Economics, the Institute for Employment Studies and the Pensions Policy Institute. There was cognitive testing of questions and a small scale pilot to test changes to the questionnaire made for PPLL Wave 2.

Overview of Wave 2 questionnaire

The questionnaire comprised the following modules:

- Demographics: including establishing respondent's employment/retirement status
- Planning for retirement: including information sources used
- Experiences of/preference for work in later life
- Expectations for income in retirement: including knowledge of and expectations around the State Pension
- Private pension provision
- Final demographics: including financial literacy quiz, savings, income, tenure

Wherever possible, question wording used at PPLL Wave 1 was retained to enable comparisons to be made between the two time points. Some new questions were introduced – particularly around pensions engagement and people's knowledge and awareness of the State Pension – to reflect new policy priorities. A new module of questions asking about people's willingness to pay for different pension products and services was added at Wave 2. Following a review of the data collected at Wave 1 – which raised questions about the value of asking detailed information about every pension respondents held – the structure and routing of the private pension provision module was simplified. Finally, as discussed below, the questionnaire was adapted to reflect the fact that PPLL Wave 2 was primarily a web-based survey (with the option to complete via the telephone) while Wave 1 had been telephone only.

The full Wave 2 questionnaire indicates where questions are repeats of questions asked at Wave 1 (or near-repeats with some amendments). See Annex A.

Adapting the PPLL Wave 1 questionnaire for web

When changing the mode of a survey it is often necessary to make changes to the questionnaire in order to ensure instruments are mode appropriate. This needs to be done in such a way as to ensure, as far as possible, that the questions remain

comparable across modes. For PPLL Wave 2 some adjustments were needed to adapt the Wave 1 questionnaire (fielded via Computer Assisted Telephone Interviewing (CATI)) for web self-completion, albeit with the option of completing via CATI. The main adjustments made were:

Question stems

- All question stems were made to be as short as possible (ideally under 250 characters). This ensures that questions could fit on a mobile screen.
- First person requests (for example, 'Please tell me which one of the following best describes your current situation.' Was amended to 'Which one of the following best describes your current situation.')
- were removed from question stems, as well as superfluous question marks and quotation marks.
- Bullet points and additional spacing were added to improve the display of longer questions on screen.

Interviewer instructions

- Interviewer instructions were removed for people completing on the web.

Optional definitions

- Sometimes questions included definitions which had previously been for the interviewer to read out as needed. The wording of these definitions was reworded to be more respondent facing. For web respondents, definitions were shown to respondents in drop-down boxes or information buttons rather than via an "INTERVIEWER: READ OUT" instruction.

Soft and hard checks

- Program checks e.g. to flag potentially inconsistent answers or amounts entered were used sparingly to avoid frustrating respondents.
- Any checks that were retained were updated to include clear instructions on how to resolve the error and checks could be suppressed (a soft check) to enable respondents to progress.

Open ended questions

- All open ended questions (for example those to collect job details) were reworded to be respondent facing and request information using clear instructions (such as bullet points).
- A soft check was added for web respondents prompting them to enter a minimum number of characters to ensure sufficient detail was included in their response to open ended questions.

Pagination

- The layout of the questionnaire was updated so that there was only one question asked per page. Where multiple questions needed to be asked on the same page (usually when questions utilised the same answer scale), these were programmed as a collapsible grid, with each question expanding to appear on screen in turn.

Don't know/ refusal

- In both survey modes don't know and refusal options were available at each question but generally hidden from the respondent. Interviewers could select these options for telephone respondents but did not read them out. For web respondents, don't know and refusal responses were not initially shown on screen. However, they would appear, and could be selected, if a respondent attempted to skip a question. The use of hidden codes ensured low levels of item non-response and ensured consistency with PPLL Wave 1.

Hidden responses

- The Wave 1 questionnaire included some questions with hidden response options such as "it depends" or "Never" for the age at which people planned to retire. These could be selected by telephone interviewers but were not read out to respondents. Such hidden response options were not practical with a web questionnaire. Where possible these hidden codes were removed from both the web and telephone questionnaire at Wave 2. On a few occasions they were retained but made visible to respondents upfront.

Cognitive testing

Cognitive interviewing methods provide an insight into the mental processes used by participants when answering survey questions, thus helping researchers to identify problems with question wording and design. Cognitive testing focused on new questions introduced for Wave 2, including questions about people's willingness to pay for different products and services, with potentially complex question wording and/or response options.

Methodology

In total, 16 interviews were conducted with people recruited specifically for cognitive testing. Two rounds of testing were conducted with 8 participants in each round.

The first round of 8 interviews focussed on new questions covering a range of different topics. The second round of 8 interviews focussed on the new willingness to pay questions.

A professional recruitment agency, Propeller Field, was used to recruit research participants for both rounds of testing. All participants received a £30 Love2Shop voucher as a thank you for taking part in the cognitive interviews.

The participants were recruited to ensure variation in age, gender, educational level, their employment/retirement status, whether they were in receipt of any state benefits, whether they were receiving a pension at the time of the interview, and the type of pension they were receiving.

Interviews were conducted by researchers trained in cognitive methods. They took part over Zoom with participants being shown the questions on-screen. Participants were trained to 'think aloud' at the beginning of the interview, i.e. to talk the interviewer through their thought processes when hearing and answering a question and were asked to use this technique when hearing the survey questions. They were then asked probing questions in order to gather the required information. This included:

- Comprehension of key terms within the questions
- Whether participants were able to recall the information requested and whether they constrained their thinking to the timeframes asked about
- Whether answer options were being used appropriately and whether any response options were missing
- The cognitive burden of answering the questions.

All interviews lasted approximately 1 hour.

New question findings

Some changes to question wording and layout were made following cognitive testing. For example, some wording was put in bold for emphasis when completing via the web.

Participants were also asked about the usability of the web survey. Feedback mostly centred around the appearance of the survey on participant devices. Following feedback, a 'select all that apply' instruction was displayed on the web for multiple choice questions for clarity.

Willingness to pay findings

Cognitive testing primarily focused on how well people understood what they were being asked to do, in terms of being asked to assign a "value" to products and services, and how well they understood the definitions of the different products and services.

The product definitions were generally found to work well. There was some confusion among respondents about whether or how they were being asked to pay and whether, for example, this was covered by existing fees e.g. to their pension provider. The question wording was subsequently amended to make this clearer.

There was also mixed views on how useful including statements reassuring people that DWP had no plans to start charging for services was and whether this would discourage people from underreporting amounts or encourage them to overreport. It was recommended to include a split ballot experiment in the pilot to test the placement of this reassurance statement.

Pilot

A small-scale web-CATI pilot of the PPLL Wave 2 questionnaire was conducted in August 2024. All new questions – including all of the redesigned private pension provision module and the new willingness to pay questions – were included in the pilot. The main purpose of the pilot was to:

- Test the feasibility of asking new questions on willingness to pay (WTP) and, in particular, to provide evidence on suitable monetary starting values for these questions.
- Run a split ballot experiment to test whether people's WTP was impacted by the placement of a statement reassuring them there were no plans to charge for the services (either before or after the WTP questions).
- Gauge questionnaire length and consider whether further cuts to content might be necessary to keep the questionnaire to 45 minutes in length.
- Review the distribution of responses to some of the new questions to see how they were working - for example, whether the response options provided at multi-code questions were appropriate/sufficient.

Methodology

A total of 20 telephone participants and 250 web participants were invited to take part in pilot fieldwork. Web invitees were only able to complete via web and telephone invitees were only able to complete over the phone. This was to ensure we were able to test completion of the survey in both modes. In total, 103 complete web interviews and 17 complete telephone interviews were obtained.

The web participants were sampled from the [NatCen Opinion Panel](#). A random sample was drawn from among Panel respondents who had previously agreed to be contacted for follow-up research (that is for research other than the standard bi-monthly Panel questionnaires) and who were aged 40 to 75 and living in Great Britain at the time the sample was drawn. Those that completed the survey were given a £10 voucher as thanks for taking part.²

The telephone participants were recruited by an external agency, Propeller Field, according to quotas set for age, sex and pension status. Interviews were carried out by trained interviewers in NatCen's Telephone Unit. The interviewers were briefed by the research team ahead of fieldwork. A debrief session to obtain feedback from the interviewers was held post-fieldwork. Telephone participants received a £15 voucher as thanks for taking part.

Key findings and recommendations

The average pilot interview length was used to estimate the length of the mainstage survey. This was estimated to be approximately 45 minutes. No questionnaire cuts were required as a result of the pilot.

² This is the standard incentive paid to Panel respondents. The £15 offered to telephone respondents mirrors the incentive amount costed for mainstage fieldwork and also reflects the fact that telephone interviews generally take longer.

Some participants broke off before they reached the end of the questionnaire. A number of these breakoffs occurred during Module 5 (covering private pensions) either before or during questions asking about willingness to pay. It was agreed that the cut-off point for a partial interview should be set near the beginning of Module 5 – and partial interviews included in the final cases for analysis - to avoid excessive data loss due to break-offs (see Chapter 5 for more on break-offs during mainstage fieldwork).

The WTP questions worked well and the starting values used were considered to be appropriate, resulting in a reasonable range of responses. It was recommended that the order of the questions, and the starting values used, be randomised to minimise the impact of the chosen starting value on responses.

It made little difference where the statement reassuring people they would not be charged for services was placed. For the mainstage, it was agreed to include this statement in the introduction to the WTP questions to ensure that everyone answering the WTP questions, including anyone who broke off part way through that section of the questionnaire, saw the statement.

Some minor amendments to question response options in module 5 were also recommended and implemented for the mainstage.

Table 3.1 Composition of PPLL pilot respondents

Sample characteristics		Number of people	
		Web	Telephone
Sex	Male	53	8
	Female	50	9
Age	40-49	22	9
	50-54	14	0
	55-64	30	3
	65-74	37	5
Employment status	In paid work	53	10
	Not in paid work	18	4
	Retired	32	3
Holder of a private pension	Yes	87	13
	No	16	4
Total number of productives		103	17

Note: Gender and age data extracted from participant sample data, employment information taken from survey response data.

4 Mainstage Fieldwork

Fieldwork dates

Mainstage fieldwork place between 28th October and 7th December 2024, with telephone fieldwork starting on the 5th November 2024.

Respondent communications

All sampled individuals received a letter inviting them to complete the survey. The letter was addressed to a named individual. In households where more than one individual was sampled, each individual received their own letter. The letter was accompanied by a study leaflet explaining more about the survey and highlighting some findings from Wave 1 of the study.

The letter included a link to the survey along with a unique access code for each respondent. There was also a QR code included on the letter which took people to the survey log in page.

Sampled individuals who did not respond to earlier communications were sent a series of reminders. Those who had provided an email address at the end of the FRS interview (58% of the sample) were sent up to three email reminders (including a direct link to the survey unique to each respondent). Others were sent up to two postal reminders. The reminders used a range of different headers and different messaging – highlighting the survey incentive value, ease of completion, and time sensitivity - to try and maximise response. All communications referred to the survey as the ‘Preparing for the Future Study’ to ensure its appeal was as wide as possible.

Table 4.1 Mainstage mailing dates

Mailing	Date sent	Letter/email subject
Invitation letter	28/10/2024	Preparing for the Future Take part in our survey and receive a £15 reward
Reminder 1 email	6/11/2024	Preparing for the future study: Take part and get a £15 voucher
Reminder 1 letter	6/11/2024	Preparing for the Future Take part in our survey and share your experiences
Reminder 2 email	18/11/2024	Preparing for the future study: Taking part is easy!
Reminder 2 letter	18/11/2024	Preparing for the Future Take part in our survey and receive a £15 reward

Reminder 3 email	5/12/2024	Preparing for the future study: Last chance!
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An issue with NatCen’s bulk email system meant that the first email reminder was initially sent out to people without working links to access the survey. A correction email was sent out without 48 hours including the correct links. The issue does not appear to have negatively impacted on response.

Copies of the reminder letters and emails and the study leaflet can be found in Annex B.

Telephone fieldwork

While PPLL Wave 2 was intended primarily as a web survey, it was considered important to offer telephone completion as an alternative mode. This was to ensure that the offline population were able to take part, something particularly important given the older age range of the target population.

Potential participants were informed in the reminder letters/emails that they could take part in the study via telephone, and that they could book an appointment with an interviewer to complete the survey over the phone. Initial communications only mentioned the telephone option in the FAQs section on the back of the letter (as web completion was the preferred mode), while later letters and emails put more emphasis on this option to maximise response.

A Telephone Unit briefing was held for all interviewers working on the CATI survey for PPLL. Interviewers were provided with practice scenarios for the survey and completed a dummy interview so that they were familiar with the questions and program before fieldwork begun. This was particularly important for the willingness to pay module, where questions were and quite wordy and required interviewers to be familiar with them.

Incentives

All respondents were offered a £15 incentive upon completion in the form of a Love2Shop voucher redeemable in a range of high street stores. If respondents completed via web, then they were offered an e-voucher. If respondents completed via telephone, then they were offered a physical gift card on the assumption that many of those completing over the phone were doing so due to issues with accessing the internet.

The thank you letter/email accompanying the incentive included a link to the study website which included links to UK Government websites and other websites such as Pension Wise and Citizens Advice, which people could use to access more information about the topics covered in the survey.

Interview length

Analysis undertaken on the pilot data estimated that the mainstage survey would take 46 minutes on average to complete via web. Table 4.2 shows the actual timings for both web and telephone for mainstage fieldwork.

The median web interview length (excluding outliers over 180 minutes) was 44 minutes. Timings varied considerably between cases, as the survey length was dependent on respondent circumstances and the routing they followed through the survey. The bottom 25% of web cases had an interview length of up to 34 minutes, while the top 25% were 57 minutes or more.

The median telephone interview length (excluding outliers over 180 minutes) was 60 minutes. Telephone interviews were expected to take longer as interviewers have to read out all questions, instructions, and response options (as showcards were not available). As with the web timings, interview length varied. The bottom 25% of cases had an interview length of up to 53 minutes, while the top 25% were 73 minutes or more.

Table 4.2 Interview length (minutes)

Mode	Mean	Median	Std. deviation	Min	Max	25th percentile	75th percentile	No. of interviews
Web	49.6	43.7	24.0	10.8	179.9	34.1	57.4	3,504
Tel	64.0	60.2	15.2	38.8	111.1	53.4	73.3	43

Note: Outliers excluded from timings (length>180 minutes). Fully complete interviews only.

5 Response

Overall, 4,036 individuals responded to the Planning and Preparing for Later Life (PPLL) survey at Wave 2. This represents 28.7% of the issued sample.³ Of these 4,036 individuals, the majority (3,858 or 96%) completed the whole survey while the remainder (178 or 4%) completed at least up to and including the end of the first set of pension loop questions in Module 5 (Question: PenLStat) but subsequently broke off before reaching the end of the questionnaire. Both full and partial complete interviews have been included in the final dataset and are counted as productive cases.

Web surveys provide little information about the reasons for non-participation. There was a known outcome – refusal or ineligible (e.g. if a sampled participant had died) - in a small number of cases where people had got in touch with NatCen’s Survey Enquiry Team or provided a telephone number and been contacted by NatCen’s Telephone Unit (N=46). There were also 385 people (2.8% of the sample) who accessed the online survey but did not complete it as far as the point needed to count as a partial complete (see discussion of break-offs below). No information is available about the remaining cases.

Telephone interviews

Only 46 out of 4,036 respondents (1.1%) opted to complete the survey by telephone. This number is small enough that there is no reason to expect difference in mode of survey completion to impact on the final data.

Break-offs

4,395 people accessed the online questionnaire. Of these, 13% did not complete the survey: 4% (or 178 individuals) got as far as the point needed to count as a partial interview, while 9% (or 385 individuals) did not get that far and were subsequently counted as unproductive. Many of the break-offs (116 of 385, 30%) were people who did not progress beyond the introduction screen. Besides that, there was no clear pattern/specific point in the questionnaire at which people broke off.

Table 5.1 PPLL Wave 2 online break-offs

	N	% of issued sample	% of those who accessed questionnaire

³ This is comparable to PPLL Wave 1 – which was conducted by telephone – when 29% of the issued sample took part.

Invited to complete survey	14,069	100%	
Accessed online questionnaire	4,395	31.2%	100%
Accessed online questionnaire but did not reach cut off for partial interview	385	2.7%	8.8%
Reached cut off for partial interview online but did not complete	178	1.3%	4.1%
Completed the online questionnaire	3,812	27.1%	86.7%
Completed the online questionnaire but cases dropped for data quality reasons ⁴	20	0.1%	0.5%

Certain groups were less likely to respond to the survey than others, including younger age groups, renters and people living in more deprived areas. Survey weighting takes account of these differences in response between groups to ensure that the final achieved sample is representative of the 40 to 75 year old population (see Chapter 7, Tables 7.3 and 7.4).

⁴ See Chapter 6

6 Data processing

Coding

Post-survey coding was carried out by NatCen's Data Operations team. Two types of coding were undertaken.

Other specify

Coders reviewed the verbatim answers provided to any questions with an "Other – please specify" response option. Where possible answers were back-coded into one of the responses in the original code frame.

The verbatim answers were reviewed to see if it was necessary to add additional codes for any questions (if the same "other" answers recurred multiple times).

Additional codes were added for the following questions:

- Penearlywhy: Why accessed pension before fully retiring
- Retfinwhy: Why worse off in retirement than expected
- Retfinwhy2: Why better off in retirement than expected
- Pentrckd: Why find it difficult to keep track of pension savings
- Penevent: Life events that prompted review of pension savings
- Penwakeact: Action taken after receiving retirement pack
- Sourceinc6: Sources of income

Occupation coding

Information on respondents' job details was used to code occupation using the Standard Occupation Classification (SOC) 2020, industry using the Standard Industry Classification (SIC) 2007 and the National Statistics Socio-Economic Classification (NS-SEC) 2020. SOC 2010 and NS-SEC 2010 codes were also provided for comparability with Wave 1.

For respondents currently in paid work, details of their current main job were coded. For respondents who had retired or were not currently in paid work, details of their previous job were coded.

Data cleaning

Post-fieldwork a series of checks on the data were conducted by NatCen's Data Management team.

- **Routing checks:** The dataset was checked to ensure that the correct respondents had been routed to each question. There were a few instances

where respondents had been routed to questions they should not have been. If this was the case their answers were replaced with a -1 missing code (see below). There were also a few instances where respondents had not been routed to questions they should have answered. If this was the case, they were assigned a -11 missing code. These discrepancies affected only a small number of cases (most likely the result of respondents moving back and forward in the questionnaire and amending their answers) and did not indicate an error in the questionnaire routing.

- **Checking for speeders:** A common data quality check for online surveys is to look at the length of time taken to complete the survey. A questionnaire completed too quickly may indicate falsification and/or poor quality data. An expected interview length for each respondent who completed the survey online was calculated based on the median interview length for someone following a given route through the questionnaire.

Any cases where the actual interview length was identified as an outlier, that is, significantly far from the lower quartile of responses in the sample, were excluded from the dataset. Thirteen cases were excluded for speeding.

- **Other data quality/eligibility checks:** Ten further cases were removed during cleaning. Three of these were due to the respondent no longer being based in the UK, five due to not completing questions adequately to allow retirement status (RetireDV) to be calculated (a key variable in routing subsequent questions), one case due to DOB given not matching the sample data, and one case where their age was outside the range of the target population.

Missing values

Where respondents answered “don’t know” or refused to answer a question, their answers have been assigned -8 and -9 codes respectively. Respondents that were correctly filtered away from a question were given the code -1 “Not applicable” and respondents who were incorrectly filtered away from a question were given the code -11 “Missing answer”.

The PPLL dataset has missing values switched on so that any respondents with missing values on a given question are not included in the analysis of that question.

Derived variables

As well as the questionnaire responses recorded during the interview (see Annex A for a copy of the questionnaire) the main PPLL dataset contains a number of derived variables computed post-fieldwork. Examples of derived variables include continuous, numeric variables that have been recoded into categorical variables for ease of analysis (e.g. number of hours worked). A lot of the derived variables relate to Module 5 on pension provision and summarise the information provided across the different pension loops.

Derived variables have “DV” at the start of the variable name. A full list of the derived variables is available in the data documentation accompanying the dataset which has been deposited with the UK Data Service.

Significance testing

Differences between subgroups or between PPLL Wave 1 and Wave 2 discussed in the PPLL main findings report have been tested for statistical significance.

Differences are significant at the 5% level unless explicitly stated otherwise. Testing was done in SPSS using logistic regression and F tests.

The statistical tests used only allow us to identify whether the relationship between two variables is significant overall. Multiple tests of significance between different categories of a variable were not performed. For example, a passage which reports that saving increased with age may illustrate this by saying x% of 40 to 49 year olds had savings compared with y% of those 65+. The overall relationship between age and savings will have been tested for statistical significance but the specific difference between x% and y% will not have been tested separately.

7 Weighting

To ensure findings from the PPLL survey can be generalised to the population of interest (people aged 40 to 75 living in Great Britain), weights were constructed to reduce bias caused by differential probabilities of selection and non-response. As the PPLL sample was selected from respondents to a previous survey (FRS), the weights needed to take account of selection and non-response biases from both PPLL and FRS surveys. The weights were produced by NatCen statisticians using the following 6 stages.

Stage 1: selection and non-response at FRS

The probability of being selected to participate in the FRS varied by region. There were also systematic differences in the probability of survey response. To account for selection and non-response bias, FRS was weighted, and the final survey weight (GROSS4) was available for all households (and individuals) selected to participate in PPLL. The starting weight of the PPLL weighting process is: $W1=GROSS4$.

Stage 2: selection for PPLL

In the few instances where 3 or more people from the same household were eligible for PPLL, two were randomly selected to be approached for an interview. The probability (P1) of each person in the PPLL sample having been selected was calculated based on the number of eligible individuals in the household (X).

Specifically:

- for households where $X < 3$ $P1=1$;
- for households where $X \geq 3$ $P1=2/X$.

The individual selection weight (W2) was calculated as the inverse of this probability, i.e. $W2=1/P1$.

A composite weight (W3) was then calculated as the product of the weights at stages 1 and 2, i.e. $W3=W1 \times W2$.

Stage 3: consent to be re-contacted for future research

Respondents to FRS were asked to provide consent to be re-contacted for future research and only those agreeing were eligible for PPLL. FRS respondents who consented to be re-contacted may be systematically different from those that did not give consent. It was not possible to model the decision to consent to re-contact (e.g. using logistic regression modelling) because NatCen only had access to data for

those FRS respondents selected for the PPLL sample (i.e. only those who consented to be re-contacted).

Systematic differences in the FRS respondents' consent to be re-contacted for future research was assessed by comparing the profile of PPLL sample containing consenting FRS respondents (weighted by W3) with the full FRS sub-sample of people 40-75 year old in Great Britain containing consenting and non-consenting respondents (weighted by GROSS4) on 15 key individual/household characteristics as measured in the FRS. This information was supplied to NatCen by DWP as part of the PPLL sample file. The characteristics considered were age, sex, region, ethnicity, marital status, employment status, tenure, number of adults/children in the household, household composition, household income, age group of household reference person, council tax band, NS-SEC, and educational qualifications. Table 7.1 presents the comparison of all FRS respondents in Great Britain in the eligible age range with the PPLL issued sample separately for FRS 2022-23 and FRS 2023-24. No large differences (i.e. larger than the margin of error around PPLL survey estimates⁵) were identified for most indicators in both survey years. For example:

- in 2022-23, 73.7% of all FRS respondents in the eligible age range (consenting and non-consenting to be re-contacted for future research) were in a relationship compared with 67.4% of people in a relationship in the PPLL issued sample, a difference of 6.3 percentage points (i.e. people in a relationship were less likely to give consent to be re-contacted for future research than those not in a relationship).
- in 2023-24, 51.4% of all FRS respondents in the eligible age range were female compared with 54.5% of females in the PPLL issued sample, a difference of 3.1 percentage points (i.e. women were more likely to give consent to be re-contacted for future research than men).

To reduce the bias due to differential non-consent rates, the composite weight from stage 2 (W3) was calibrated to be in line with the FRS sample across the variables that showed large differences (all 15 variables except household composition and council tax band). The resulting weight created from this calibration step (W4) acted as a proxy weight for individuals selected for the PPLL sample. To reduce inflation of standard errors due to few large (outlier) weights, the calibration adjustment (ratio of calibration weight to W3) was trimmed at the top 0.5%; the largest 7 weights in 2023-24 and largest 2 weights in 2022-23 were also trimmed at the value of the 8th largest (2022-23) and 3rd largest (2023-24) weight respectively.

Table 7.2 shows the distribution of the PPLL sample weighting by W4 on the same 15 variables confirming that after calibration bias due to non-consent by these 15 variables has been largely eliminated.

⁵ The margin of error around PPLL survey estimates was estimated to be about 2.2 percentage points assuming an average design factor due to weighting of 1.4.

Stage 4: non-response at PPLL

To investigate whether PPLL respondents were systematically different from PPLL non-respondents and to reduce non-response bias, the probability of selected individuals responding to PPLL was estimated using logistic regression modelling (weighted by $W4^6$). Individual response was used as the outcome measure in the logistic regression and individual/household characteristics recorded at the FRS (i.e. those used at Stage 3) and geographic-focused measures (i.e. index of multiple deprivation, population density, output area classification, and urban-rural indicator) used as independent variables. The final selection of explanatory variables for the model was determined using a stepwise approach where the incremental effect of either adding or removing variables on the fit of the model was tested for statistical significance. Age group, sex and region were included in the model regardless of statistical significance. The final model is shown in Table 7.3.

The predicted propensity to participate ($P2$) was estimated for each PPLL respondent and the non-response weight ($W5$) was calculated as the inverse of this probability, i.e. $W5=1/P2$. $W5$ was trimmed at the top 0.5%.

A composite weight ($W6$) was then calculated as the product of the weights at stages 3 and 4, i.e. $W6=W4 \times W5$. The largest 4 weights were trimmed at the value of the 5th largest weight.

Table 7.4 shows the distribution of the PPLL responding sample before and after non-response weighting across all variables considered in the regression model confirming that after weighting by $W6$, the non-response bias has been substantially reduced. The estimated bias after non-response weighting was within the survey's margin of error for all measures considered.

Stage 5: calibration to ONS mid-year population estimates

The PPLL achieved sample (weighted by $W6$) was compared against the latest (2023) Office for National Statistics (ONS) mid-year population estimates for the population of interest (people 40 to 75 year olds living in Great Britain) in terms of region, age and sex. Even though the profiles were broadly similar without large/systematic differences (all differences less than 2 percentage points, i.e. within the survey's margin of error), there were few instances where the difference between the weighted PPLL data and the latest mid-year population estimates was greater than 1 percentage point. For example, people aged 70+ were slightly overrepresented in the PPLL sample (14.4%) compared to the population (13.0%) and people in London were slightly underrepresented in the PPLL sample (10.2%)

⁶ The base has been rescaled to the PPLL in scope sample size (14066); 3 cases were found during fieldwork to have moved outside of Great Britain.

compared to the population (12.0%). A final calibration step was carried out to eliminate the small observed differences and ensure the weighted profile of the PPLL achieved sample was in line with the population. The resulting weight created from this calibration step was the final PPLL weight (PPLLW2_WT). The largest 3 weights were trimmed at the value of the 4th largest weight. Table 7.5 shows the weighted PPLL achieved sample before and after the final calibration to mid-year ONS population estimates for age group by sex and region.

Stage 6: comparison of PPLL and FRS

The final stage of the weighting methodology was to compare the PPLL achieved sample weighted by the final weight (PPLLW2_WT) against the combined 2022-23 (full year) and 2023-24 (first 6 months) FRS weighted samples for respondents 40 to 75 years old in Great Britain on the same 15 measures used at stage 3. The comparison is shown in Table 7.6 confirming that (as expected) the weighted PPLL and FRS profiles are broadly similar and without big (i.e. larger than the survey’s margin of error) and/or systematic differences.

Finally, Table 7.7 presents summary statistics for the weights of the achieved PPLL sample (n=4,036) at each stage of the weighting. The (average) design factor (deff) for the final PPLL weights is 1.39 with an (average) estimated effective sample size (neff) of 2077.⁷

Table 7.1: Comparison of FRS and PPLL samples before calibration to FRS estimates

	2022-23			2023-24		
	FRS (Weighted by Gross4)	PPLL (Weighted by W3)	difference	FRS (Weighted by Gross4)	PPLL (Weighted by W3)	difference
Age group at FRS						
35-39 ⁸	5.5%	5.2%	0.3%	3.2%	3.0%	0.2%
40-44	14.5%	13.9%	0.5%	14.8%	14.6%	0.2%
45-49	13.7%	12.9%	0.8%	13.7%	12.5%	1.2%
50-54	14.9%	14.0%	0.9%	15.6%	14.6%	1.0%
55-59	16.2%	15.8%	0.4%	15.4%	15.4%	0.0%
60-64	13.9%	14.6%	-0.7%	13.9%	14.4%	-0.5%
65-69	11.7%	13.0%	-1.3%	12.6%	13.9%	-1.2%
70+	9.6%	10.6%	-0.9%	10.8%	11.7%	-0.9%
Sex						

⁷ The design factor and effective sample size represent the average effect of the weighting and do not take into account the clustering (e.g. within FRS primary sampling units and/or within households) and stratification of the PPLL sample.

⁸ Individuals were selected for PPLL if they were aged 40 to 75 on 1 July 2024. Some of these individuals will have been aged 35 to 39 when they completed the original FRS interview in 2022-23 or 2023-24.

	2022-23			2023-24		
	FRS (Weighted by Gross4)	PPLL (Weighted by W3)	difference	FRS (Weighted by Gross4)	PPLL (Weighted by W3)	difference
Male	48.9%	45.8%	3.1%	48.6%	45.5%	3.1%
Female	51.1%	54.2%	-3.1%	51.4%	54.5%	-3.1%
Region at FRS						
North East	4.3%	4.6%	-0.3%	4.3%	4.4%	-0.1%
North West	11.6%	11.0%	0.6%	11.7%	11.1%	0.7%
Yorks and the Humber	8.6%	8.8%	-0.2%	8.6%	8.8%	-0.2%
East Midlands	7.9%	8.4%	-0.5%	8.0%	8.7%	-0.7%
West Midlands	9.2%	9.1%	0.0%	9.3%	9.4%	-0.1%
East of England	10.2%	10.5%	-0.3%	10.3%	10.2%	0.1%
London	11.3%	10.6%	0.8%	10.1%	9.0%	1.1%
South East	13.6%	14.0%	-0.4%	13.8%	13.4%	0.5%
South West	9.3%	9.6%	-0.3%	9.6%	10.0%	-0.3%
Wales	5.0%	5.1%	-0.1%	5.1%	5.2%	-0.1%
Scotland	8.9%	8.3%	0.6%	9.0%	9.8%	-0.8%
Ethnicity						
White	87.3%	90.2%	-2.9%	87.3%	90.0%	-2.8%
Mixed	1.1%	1.2%	-0.1%	0.9%	1.0%	-0.1%
Asian	7.1%	4.9%	2.3%	6.7%	4.5%	2.2%
Black	2.8%	2.4%	0.4%	3.6%	3.1%	0.6%
Other/Not declared	1.7%	1.4%	0.3%	1.5%	1.4%	0.1%
Marital status						
In a relationship	73.7%	67.4%	6.3%	73.8%	67.5%	6.3%
Not in a relationship	26.3%	32.6%	-6.3%	26.2%	32.5%	-6.3%
Employment status						
Self-Employed	10.1%	8.5%	1.5%	8.9%	7.8%	1.1%
Employed	53.0%	51.3%	1.7%	53.6%	51.3%	2.3%
Retired	16.1%	18.2%	-2.1%	17.8%	19.4%	-1.6%
Other economically inactive	20.8%	21.9%	-1.2%	19.7%	21.5%	-1.8%
Tenure						
Rented	26.8%	27.5%	-0.7%	25.5%	27.0%	-1.5%
Owned outright	39.4%	39.8%	-0.4%	41.6%	41.5%	0.1%
Owned with mortgage (including rent-free)	33.8%	32.7%	1.1%	32.9%	31.5%	1.4%
Number of adults in household						
1	19.1%	25.6%	-6.5%	19.2%	25.7%	-6.6%
2	60.6%	58.0%	2.5%	60.8%	58.6%	2.2%
3+	20.3%	16.3%	4.0%	20.0%	15.6%	4.4%
Number of children in						
0	69.7%	72.4%	-2.8%	70.7%	74.0%	-3.3%
1	11.5%	10.8%	0.6%	11.4%	9.4%	1.9%
2	13.7%	12.1%	1.5%	12.6%	11.9%	0.8%
3	3.9%	3.4%	0.5%	3.9%	3.6%	0.3%
4+	1.3%	1.2%	0.1%	1.4%	1.1%	0.3%
Household composition						

	2022-23			2023-24		
	FRS (Weighted by Gross4)	PPLL (Weighted by W3)	difference	FRS (Weighted by Gross4)	PPLL (Weighted by W3)	difference
Single Adult no children	16.5%	21.9%	-5.4%	16.9%	22.5%	-5.6%
Couple no children	39.0%	39.0%	0.0%	39.8%	40.2%	-0.3%
Single parent HH	2.6%	3.8%	-1.2%	2.2%	3.2%	-1.0%
Couple with children	21.5%	19.0%	2.6%	21.0%	18.4%	2.5%
Multi adult HH	20.3%	16.3%	4.0%	20.0%	15.6%	4.4%
Household income						
Under £200 a week	3.5%	3.9%	-0.4%	3.5%	3.9%	-0.4%
£200 and less than £600	24.9%	27.6%	-2.7%	24.7%	27.3%	-2.6%
£600 and less than £1000	25.2%	25.4%	-0.2%	24.2%	25.7%	-1.5%
£1000 and less than £2000	31.8%	30.3%	1.5%	33.4%	31.0%	2.3%
Above £2000	14.6%	12.9%	1.7%	14.3%	12.1%	2.2%
Age of HRP						
16-44	18.9%	18.1%	0.8%	17.7%	17.3%	0.4%
45-54	27.7%	26.8%	0.9%	28.0%	26.6%	1.4%
55-64	29.2%	29.9%	-0.6%	28.8%	29.3%	-0.4%
65+	24.1%	25.2%	-1.0%	25.5%	26.9%	-1.4%
Council tax band						
A (including unknown)	19.9%	20.6%	-0.7%	20.1%	21.9%	-1.8%
B	17.8%	18.5%	-0.7%	17.4%	17.9%	-0.5%
C	19.5%	19.7%	-0.2%	20.4%	20.3%	0.1%
D	17.5%	16.8%	0.7%	16.2%	16.0%	0.3%
E	12.5%	12.2%	0.3%	13.3%	12.7%	0.6%
F	7.4%	7.3%	0.1%	7.0%	6.4%	0.6%
G, H and I	5.4%	4.8%	0.6%	5.5%	4.8%	0.7%
NS-SEC						
Managerial and professional	43.7%	46.0%	-2.3%	43.3%	46.2%	-2.9%
Intermediate	12.3%	13.2%	-0.9%	12.7%	13.5%	-0.8%
Small employer	9.7%	8.5%	1.2%	9.2%	8.0%	1.3%
Lower supervisory and technical	5.8%	5.5%	0.3%	6.4%	5.8%	0.6%
Semi-routine and routine	24.2%	23.0%	1.2%	23.8%	22.6%	1.1%
Not classified	4.4%	3.8%	0.6%	4.6%	3.9%	0.7%
Educational qualification						
Degree level qualification	34.5%	36.3%	-1.8%	34.9%	36.8%	-1.9%
Qualification below degree level	49.1%	50.6%	-1.5%	49.6%	50.3%	-0.7%
No qualification	11.7%	9.8%	1.9%	10.8%	9.7%	1.0%
Missing	4.7%	3.3%	1.4%	4.7%	3.2%	1.5%
<i>Number of cases (sample size)</i>	<i>23045</i>	<i>9436</i>		<i>7571</i>	<i>4633</i>	

Table 7.2: Comparison of FRS and PPLL samples after calibration to FRS estimates

	2022-23			2023-24		
	FRS (Weighted by Gross4)	PPLL (Weighted by W4)	Difference	FRS (Weighted by Gross4)	PPLL (Weighted by W4)	Difference
Age group at FRS						
35-39	5.5%	5.5%	0.0%	3.2%	3.2%	0.0%
40-44	14.5%	14.5%	0.0%	14.8%	14.8%	0.0%
45-49	13.7%	13.7%	0.0%	13.7%	13.4%	0.3%
50-54	14.9%	14.9%	0.0%	15.6%	15.6%	0.0%
55-59	16.2%	16.3%	0.0%	15.4%	15.5%	-0.1%
60-64	13.9%	13.8%	0.1%	13.9%	14.0%	0.0%
65-69	11.7%	11.7%	0.0%	12.6%	12.7%	0.0%
70+	9.6%	9.6%	0.0%	10.8%	10.8%	0.0%
Sex						
Male	48.9%	48.8%	0.1%	48.6%	48.4%	0.2%
Female	51.1%	51.2%	-0.1%	51.4%	51.6%	-0.2%
Region at FRS						
North East	4.3%	4.3%	0.0%	4.3%	4.3%	0.0%
North West	11.6%	11.6%	0.0%	11.7%	11.8%	0.0%
Yorks and the Humber	8.6%	8.6%	0.0%	8.6%	8.6%	0.0%
East Midlands	7.9%	7.9%	0.0%	8.0%	8.0%	0.0%
West Midlands	9.2%	9.1%	0.1%	9.3%	9.4%	0.0%
East of England	10.2%	10.2%	0.0%	10.3%	10.3%	0.0%
London	11.3%	11.3%	0.0%	10.1%	9.8%	0.3%
South East	13.6%	13.5%	0.1%	13.8%	13.9%	0.0%
South West	9.3%	9.4%	0.0%	9.6%	9.7%	0.0%
Wales	5.0%	5.1%	0.0%	5.1%	5.2%	0.0%
Scotland	8.9%	8.9%	0.0%	9.0%	9.1%	0.0%
Ethnicity						
White	87.3%	87.4%	-0.1%	87.3%	87.3%	0.0%
Mixed	1.1%	1.1%	0.0%	0.9%	1.0%	0.0%
Asian	7.1%	7.0%	0.1%	6.7%	6.6%	0.1%
Black	2.8%	2.8%	0.0%	3.6%	3.6%	0.0%
Other/Not declared	1.7%	1.7%	0.0%	1.5%	1.5%	0.0%
Marital status						
In a relationship	73.7%	73.7%	0.0%	73.8%	73.7%	0.1%
Not in a relationship	26.3%	26.3%	0.0%	26.2%	26.3%	-0.1%
Employment status						
Self-Employed	10.1%	10.1%	0.0%	8.9%	8.9%	0.0%
Employed	53.0%	53.1%	0.0%	53.6%	53.5%	0.1%
Retired	16.1%	16.1%	0.0%	17.8%	17.9%	-0.1%
Other economically inactive	20.8%	20.8%	0.0%	19.7%	19.7%	0.0%

	2022-23			2023-24		
	FRS (Weighted by Gross4)	PPLL (Weighted by W4)	Difference	FRS (Weighted by Gross4)	PPLL (Weighted by W4)	Difference
Tenure						
Rented	26.8%	26.8%	0.0%	25.5%	25.5%	0.0%
Owned outright	39.4%	39.4%	0.0%	41.6%	41.8%	-0.1%
Owned with mortgage (including rent-free)	33.8%	33.8%	0.0%	32.9%	32.7%	0.2%
Number of adults in household						
1	19.1%	19.2%	-0.1%	19.2%	19.2%	-0.1%
2	60.6%	60.6%	0.0%	60.8%	60.7%	0.1%
3+	20.3%	20.2%	0.1%	20.0%	20.0%	0.0%
Number of children in household						
0	69.7%	69.6%	0.0%	70.7%	70.9%	-0.2%
1	11.5%	11.5%	0.0%	11.4%	11.1%	0.3%
2	13.7%	13.7%	0.0%	12.6%	12.7%	-0.1%
3	3.9%	3.9%	0.0%	3.9%	3.9%	0.0%
4+	1.3%	1.3%	0.0%	1.4%	1.4%	0.0%
Household composition						
Single Adult no children	16.5%	16.3%	0.2%	16.9%	16.7%	0.3%
Couple no children	39.0%	39.4%	-0.3%	39.8%	40.3%	-0.4%
Single parent HH	2.6%	2.9%	-0.3%	2.2%	2.6%	-0.4%
Couple with children	21.5%	21.2%	0.3%	21.0%	20.5%	0.5%
Multi adult HH	20.3%	20.2%	0.1%	20.0%	20.0%	0.0%
Household income						
Under £200 a week	3.5%	3.5%	0.0%	3.5%	3.4%	0.0%
£200 and less than £600	24.9%	24.9%	0.0%	24.7%	24.8%	-0.1%
£600 and less than £1000	25.2%	25.1%	0.1%	24.2%	24.3%	-0.1%
£1000 and less than £2000	31.8%	31.9%	-0.1%	33.4%	33.5%	-0.1%
Above £2000	14.6%	14.7%	0.0%	14.3%	14.0%	0.2%
Age of HRP						
16-44	18.9%	18.9%	-0.1%	17.7%	17.5%	0.2%
45-54	27.7%	27.8%	0.0%	28.0%	28.0%	0.0%
55-64	29.2%	29.2%	0.0%	28.8%	29.0%	-0.1%
65+	24.1%	24.1%	0.1%	25.5%	25.5%	-0.1%
Council tax band						
A (including unknown)	19.9%	20.1%	-0.2%	20.1%	21.2%	-1.1%
B	17.8%	18.2%	-0.4%	17.4%	17.2%	0.2%
C	19.5%	19.5%	0.1%	20.4%	20.3%	0.1%
D	17.5%	17.1%	0.4%	16.2%	16.5%	-0.2%
E	12.5%	12.5%	0.0%	13.3%	13.2%	0.2%
F	7.4%	7.6%	-0.2%	7.0%	6.6%	0.4%
G, H and I	5.4%	5.0%	0.4%	5.5%	5.0%	0.4%
NS-SEC						

	2022-23			2023-24		
	FRS (Weighted by Gross4)	PPLL (Weighted by W4)	Difference	FRS (Weighted by Gross4)	PPLL (Weighted by W4)	Difference
Managerial and professional	43.7%	43.8%	-0.1%	43.3%	43.5%	-0.2%
Intermediate	12.3%	12.4%	-0.1%	12.7%	12.7%	-0.1%
Small employer	9.7%	9.7%	0.0%	9.2%	9.3%	0.0%
Lower supervisory and technical	5.8%	5.8%	0.0%	6.4%	6.2%	0.3%
Semi-routine and routine	24.2%	24.0%	0.1%	23.8%	23.8%	0.0%
Not classified	4.4%	4.3%	0.0%	4.6%	4.6%	0.0%
Educational qualification						
Degree level qualification	34.5%	34.6%	-0.1%	34.9%	35.0%	-0.1%
Qualification below degree level	49.1%	49.2%	-0.1%	49.6%	49.6%	0.1%
No qualification	11.7%	11.6%	0.1%	10.8%	10.7%	0.0%
Missing	4.7%	4.5%	0.2%	4.7%	4.6%	0.1%
<i>Number of cases (sample size)</i>	<i>23045</i>	<i>9436</i>		<i>7571</i>	<i>4633</i>	

Table 7.3: Logistic regression non-response model

	Log odds	p	Odds	95% CI of odds	
				lower	upper
Age group at FRS		0.04			
35-39 ⁹	0	-	1	-	-
40-44	0.00	0.97	1.00	0.81	1.23
45-49	-0.10	0.46	0.90	0.69	1.19
50-54	-0.05	0.71	0.95	0.72	1.26
55-59	-0.11	0.49	0.90	0.66	1.22
60-64	-0.03	0.86	0.97	0.71	1.33
65-69	0.31	0.08	1.36	0.97	1.91
70+	0.20	0.27	1.22	0.86	1.73
Sex		0.79			
Male	0	-	1	-	-
Female	-0.01	0.79	0.99	0.91	1.07
Region at FRS		0.02			
North East	0	-	1	-	-
North West	0.12	0.30	1.13	0.90	1.42
Yorks and the Humber	0.08	0.53	1.08	0.85	1.38
East Midlands	0.17	0.17	1.19	0.93	1.53
West Midlands	0.22	0.09	1.24	0.97	1.59
East of England	-0.02	0.86	0.98	0.76	1.26
London	0.31	0.04	1.36	1.02	1.82
South East	0.17	0.19	1.18	0.92	1.51
South West	0.10	0.44	1.10	0.86	1.42
Wales	0.12	0.38	1.12	0.87	1.46
Scotland	-0.09	0.47	0.92	0.72	1.16
Ethnicity		<0.001			

⁹ Categories where odd=1 were used as the reference category.

	Log odds	p	Odds	95% CI of odds	
				lower	upper
White	0	-	1	-	-
Mixed	-0.21	0.30	0.81	0.55	1.20
Asian	-0.43	<0.001	0.65	0.54	0.77
Black	-0.61	<0.001	0.54	0.41	0.72
Other/Not declared	-0.55	0.00	0.58	0.40	0.83
Tenure		<0.001			
Rented	0	-	1	-	-
Owned outright	0.65	<0.001	1.92	1.70	2.16
Owned with mortgage (including rent-free)	0.35	<0.001	1.42	1.26	1.60
Number of children in household		0.10			
0	0	-	1	-	-
1	0.05	0.51	1.05	0.91	1.20
2	0.06	0.40	1.06	0.92	1.22
3	-0.23	0.06	0.80	0.63	1.01
4+	0.26	0.18	1.29	0.89	1.87
Household income		0.01			
Under £200 a week	0	-	1	-	-
£200 and less than £600	-0.23	0.04	0.80	0.64	0.99
£600 and less than £1000	-0.15	0.19	0.86	0.69	1.08
£1000 and less than £2000	-0.26	0.02	0.77	0.62	0.96
Above £2000	-0.35	0.00	0.70	0.56	0.89
Age of HRP		<0.001			
16-44	0	-	1	-	-
45-54	0.16	0.13	1.17	0.95	1.45
55-64	0.28	0.03	1.32	1.03	1.71
65+	-0.09	0.53	0.91	0.68	1.22
NS-SEC		<0.001			
Managerial and professional	0	-	1	-	-
Intermediate	-0.05	0.48	0.96	0.84	1.08
Small employer	-0.39	<0.001	0.67	0.58	0.78
Lower supervisory and technical	-0.38	<0.001	0.68	0.57	0.83
Semi-routine and routine	-0.17	0.01	0.85	0.75	0.95
Not classified	-0.03	0.78	0.97	0.78	1.20
Educational qualification		<0.001			
Degree level qualification	0	-	1	-	-
Qualification below degree level	-0.38	<0.001	0.68	0.62	0.75
No qualification	-1.02	<0.001	0.36	0.30	0.43
Missing	-0.41	<0.001	0.67	0.54	0.82
IMD quintiles		<0.001			
1st (most deprived)	0	-	1	-	-
2nd	0.12	0.10	1.12	0.98	1.29
3rd	0.14	0.06	1.14	0.99	1.32
4th	0.18	0.01	1.19	1.04	1.38
5th (least deprived)	0.32	<0.001	1.37	1.19	1.59
Supergroup		0.01			
Affluent England	0	-	1	-	-
Business, Education and Heritage Centres	-0.01	0.94	0.99	0.83	1.19

	Log odds	p	Odds	95% CI of odds	
				lower	upper
Countryside Living	0.15	0.08	1.17	0.98	1.38
Ethnically Diverse Metropolitan Living	-0.27	0.03	0.76	0.59	0.97
London Cosmopolitan	0.10	0.56	1.11	0.79	1.55
Services and Industrial Legacy	0.04	0.66	1.04	0.86	1.27
Town and Country Living	0.11	0.21	1.11	0.94	1.32
Urban Settlements	0.12	0.17	1.13	0.95	1.34
Urban rural indicator		0.03			
Urban	0	-	1	-	-
Rural	-0.11	0.03	0.89	0.81	0.99
Intercept	-1.14	<0.001	0.32	0.00	0.00

Table 7.4: PPLL sample before and after non-response weighting (NRW)

	In scope	Respondents		Difference	
		before NRW (Weighted by W4)	after NRW (Weighted by W6)	before NRW (Weighted by W4)	after NRW (Weighted by W6)
Age group at FRS					
35-39	4.7%	4.0%	4.7%	0.7%	0.0%
40-44	14.6%	12.9%	14.9%	1.8%	-0.3%
45-49	13.6%	12.1%	14.0%	1.5%	-0.4%
50-54	15.2%	14.7%	15.0%	0.4%	0.2%
55-59	16.0%	16.6%	16.2%	-0.6%	-0.2%
60-64	13.9%	15.3%	14.0%	-1.4%	-0.1%
65-69	12.0%	13.7%	11.4%	-1.7%	0.6%
70+	10.0%	10.6%	9.7%	-0.6%	0.3%
Sex					
Male	48.7%	48.5%	48.1%	0.2%	0.5%
Female	51.3%	51.5%	51.9%	-0.2%	-0.5%
Region at FRS					
North East	4.3%	3.8%	4.1%	0.5%	0.2%
North West	11.7%	11.4%	11.8%	0.3%	-0.2%
Yorks and the Humber	8.6%	8.2%	8.5%	0.4%	0.2%
East Midlands	8.0%	8.6%	7.8%	-0.7%	0.2%
West Midlands	9.2%	9.3%	9.4%	-0.1%	-0.2%
East of England	10.3%	9.7%	10.1%	0.6%	0.1%
London	10.8%	10.5%	10.2%	0.3%	0.6%
South East	13.6%	15.1%	14.1%	-1.5%	-0.4%
South West	9.5%	10.0%	9.5%	-0.6%	0.0%
Wales	5.1%	5.3%	5.5%	-0.2%	-0.4%
Scotland	9.0%	8.0%	9.1%	1.0%	-0.1%
Ethnicity					
White	87.4%	91.7%	87.8%	-4.3%	-0.4%
Mixed	1.0%	0.9%	0.9%	0.1%	0.1%
Asian	6.8%	4.8%	6.6%	2.1%	0.2%
Black	3.1%	1.6%	3.1%	1.4%	0.0%
Other/Not declared	1.7%	1.0%	1.6%	0.7%	0.0%

	In scope	Respondents		Difference	
		before NRW (Weighted by W4)	after NRW (Weighted by W6)	before NRW (Weighted by W4)	after NRW (Weighted by W6)
Marital status					
In a relationship	73.7%	77.0%	74.1%	-3.3%	-0.4%
Not in a relationship	26.3%	23.0%	25.9%	3.3%	0.4%
Employment status					
Self-Employed	9.7%	9.2%	9.2%	0.5%	0.5%
Employed	53.2%	53.7%	54.5%	-0.5%	-1.3%
Retired	16.7%	17.7%	15.6%	-1.0%	1.1%
Other economically inactive	20.4%	19.4%	20.7%	1.0%	-0.3%
Tenure					
Rented	26.4%	15.9%	25.8%	10.4%	0.6%
Owned outright	40.2%	50.3%	40.3%	-10.1%	-0.1%
Owned with mortgage (including rent-free)	33.5%	33.8%	33.9%	-0.3%	-0.5%
Number of adults in household					
1	19.2%	17.1%	18.9%	2.1%	0.3%
2	60.7%	63.3%	60.8%	-2.6%	-0.2%
3+	20.2%	19.6%	20.3%	0.5%	-0.1%
Number of children in household					
0	70.1%	72.1%	69.2%	-2.0%	0.9%
1	11.3%	10.7%	11.6%	0.7%	-0.3%
2	13.4%	13.3%	13.7%	0.1%	-0.3%
3	3.9%	2.9%	4.0%	1.0%	-0.1%
4+	1.3%	1.1%	1.5%	0.3%	-0.2%
Household composition					
Single Adult no children	16.4%	14.7%	15.8%	1.7%	0.6%
Couple no children	39.7%	43.5%	39.6%	-3.8%	0.1%
Single parent HH	2.8%	2.4%	3.1%	0.4%	-0.3%
Couple with children	21.0%	19.8%	21.3%	1.2%	-0.3%
Multi adult HH	20.2%	19.6%	20.3%	0.5%	-0.1%
Household income					
Under £200 a week	3.4%	3.7%	3.3%	-0.3%	0.2%
£200 and less than £600	24.9%	21.0%	24.8%	3.9%	0.1%
£600 and less than £1000	24.8%	24.8%	24.4%	0.0%	0.4%
£1000 and less than £2000	32.4%	34.5%	33.1%	-2.1%	-0.7%
Above £2000	14.4%	16.0%	14.4%	-1.6%	0.0%
Age of HRP					
16-44	18.4%	15.7%	18.7%	2.8%	-0.3%
45-54	27.9%	26.3%	28.2%	1.6%	-0.3%
55-64	29.1%	31.9%	29.6%	-2.8%	-0.5%
65+	24.6%	26.2%	23.5%	-1.6%	1.1%
Council tax band					
A (including unknown)	20.5%	15.0%	20.9%	5.4%	-0.5%
B	17.9%	15.6%	16.7%	2.3%	1.2%
C	19.8%	19.3%	19.4%	0.5%	0.3%
D	16.9%	19.2%	17.4%	-2.3%	-0.5%
E	12.7%	16.0%	13.7%	-3.3%	-1.0%

	In scope	Respondents		Difference	
		before NRW (Weighted by W4)	after NRW (Weighted by W6)	before NRW (Weighted by W4)	after NRW (Weighted by W6)
F	7.3%	8.5%	6.8%	-1.2%	0.4%
G, H and I	5.0%	6.4%	5.0%	-1.4%	-0.1%
NSSEC					
Managerial and professional	43.7%	52.7%	44.2%	-9.0%	-0.5%
Intermediate	12.5%	13.3%	12.6%	-0.8%	-0.1%
Small employer	9.5%	7.8%	9.0%	1.8%	0.6%
Lower supervisory and technical	5.9%	4.3%	6.0%	1.6%	-0.1%
Semi-routine and routine	24.0%	18.5%	23.8%	5.5%	0.2%
Not classified	4.4%	3.5%	4.4%	0.9%	0.0%
Educational qualification					
Degree level qualification	34.7%	44.0%	34.9%	-9.3%	-0.2%
Qualification below degree level	49.4%	46.5%	49.7%	2.8%	-0.4%
No qualification	11.3%	5.6%	10.5%	5.8%	0.8%
Missing	4.6%	3.9%	4.8%	0.7%	-0.3%
IMD quintiles					
1st (most deprived)	18.8%	13.0%	18.7%	5.8%	0.1%
2nd	18.7%	16.9%	18.2%	1.8%	0.5%
3rd	19.5%	19.7%	19.5%	-0.2%	0.0%
4th	21.2%	23.1%	21.4%	-1.9%	-0.2%
5th (least deprived)	21.9%	27.3%	22.2%	-5.5%	-0.4%
Population density quintiles					
1st (least densely populated)	14.6%	15.7%	14.9%	-1.1%	-0.3%
2nd	20.7%	21.3%	20.3%	-0.6%	0.4%
3rd	23.7%	24.6%	23.9%	-0.9%	-0.2%
4th	23.4%	22.9%	23.9%	0.5%	-0.5%
5th (most densely populated)	17.6%	15.5%	17.1%	2.1%	0.6%
Supergroup					
Affluent England	11.4%	12.3%	11.4%	-1.0%	-0.1%
Business, Education and Heritage Centres	12.1%	11.3%	11.6%	0.8%	0.5%
Countryside Living	17.7%	19.3%	18.1%	-1.6%	-0.3%
Ethnically Diverse Metropolitan Living	7.8%	6.1%	7.2%	1.7%	0.6%
London Cosmopolitan	2.1%	2.4%	2.4%	-0.3%	-0.2%
Services and Industrial Legacy	16.6%	15.2%	17.0%	1.4%	-0.4%
Town and Country Living	16.7%	18.3%	16.4%	-1.5%	0.3%
Urban Settlements	15.6%	15.2%	15.9%	0.4%	-0.3%
Urban rural indicator					
Urban	78.0%	76.9%	77.7%	1.1%	0.4%
Rural	22.0%	23.1%	22.3%	-1.1%	-0.4%
<i>Number of cases (sample size)</i>	<i>14066</i>	<i>4036</i>	<i>4036</i>		

Table 7.5: PPLL achieved sample before and after calibration to population estimates

	Population estimate	Before calibration		After calibration	
		PPLL (weighted by W6)	difference	PPLL (weighted by PPLW2_Wt)	difference
Age group at PPLL					
40-44	15.3%	15.0%	0.3%	15.3%	0.0%
45-49	13.9%	12.7%	1.2%	13.8%	0.1%
50-54	15.6%	15.4%	0.1%	15.5%	0.0%
55-59	15.9%	15.5%	0.4%	15.9%	0.0%
60-64	14.4%	15.3%	-0.9%	14.4%	0.0%
65-69	12.0%	11.7%	0.3%	12.0%	0.0%
70+	13.0%	14.4%	-1.4%	13.0%	0.0%
Age group by sex at PPLL					
Male 40-44	7.4%	6.4%	1.0%	7.4%	0.0%
Male 45-49	6.8%	5.9%	0.9%	6.8%	0.1%
Male 50-54	7.6%	7.5%	0.1%	7.6%	0.0%
Male 55-59	7.8%	7.5%	0.3%	7.8%	0.0%
Male 60-64	7.0%	7.5%	-0.5%	7.1%	0.0%
Male 65-69	5.8%	5.8%	0.0%	5.8%	0.0%
Male 70+	6.2%	7.5%	-1.3%	6.2%	0.0%
Female 40-44	7.8%	8.6%	-0.7%	7.9%	0.0%
Female 45-49	7.1%	6.8%	0.3%	7.1%	0.0%
Female 50-54	7.9%	7.9%	0.0%	7.9%	0.0%
Female 55-59	8.1%	8.1%	0.0%	8.1%	0.0%
Female 60-64	7.3%	7.8%	-0.4%	7.3%	0.0%
Female 65-69	6.2%	5.9%	0.3%	6.2%	0.0%
Female 70+	6.8%	6.9%	-0.1%	6.8%	0.0%
Region at PPLL					
North East	4.2%	4.1%	0.1%	4.2%	0.0%
North West	11.3%	11.8%	-0.5%	11.4%	0.0%
Yorks and the Humber	8.4%	8.4%	-0.1%	8.4%	0.0%
East Midlands	7.6%	7.9%	-0.3%	7.6%	0.0%
West Midlands	9.0%	9.4%	-0.4%	9.0%	0.0%
East of England	9.9%	10.1%	-0.2%	9.9%	0.0%
London	12.1%	10.2%	2.0%	12.1%	0.1%
South East	14.6%	14.1%	0.5%	14.6%	0.0%
South West	9.1%	9.5%	-0.4%	9.1%	0.0%
Wales	4.9%	5.5%	-0.5%	4.9%	0.0%
Scotland	8.8%	9.0%	-0.2%	8.8%	0.0%

Table 7.6: Comparison of FRS and PPLL samples after final weighting

	FRS (weighted by Gross4)¹⁰	PPLL (Weighted by PPLLW2_Wt)	difference
Age group at FRS			
35-39	4.7%	4.8%	0.0%
40-44	14.6%	15.7%	-1.1%
45-49	13.7%	14.7%	-1.0%
50-54	15.1%	15.2%	-0.1%
55-59	16.0%	16.0%	-0.1%
60-64	13.9%	13.6%	0.3%
65-69	12.0%	11.2%	0.8%
70+	10.0%	8.8%	1.2%
Sex			
Male	48.8%	48.7%	0.1%
Female	51.2%	51.3%	-0.1%
Region at FRS			
North East	4.3%	4.2%	0.1%
North West	11.7%	11.4%	0.3%
Yorks and the Humber	8.6%	8.4%	0.2%
East Midlands	7.9%	7.5%	0.4%
West Midlands	9.2%	9.0%	0.3%
East of England	10.2%	9.9%	0.3%
London	10.9%	12.1%	-1.2%
South East	13.7%	14.6%	-0.9%
South West	9.4%	9.2%	0.3%
Wales	5.1%	4.9%	0.1%
Scotland	9.0%	8.9%	0.1%
Ethnicity			
White	87.3%	87.0%	0.3%
Mixed	1.0%	0.9%	0.1%
Asian	7.0%	7.0%	0.0%
Black	3.1%	3.3%	-0.3%
Other/Not declared	1.7%	1.7%	0.0%
Marital status			
In a relationship	73.7%	74.0%	-0.3%
Not in a relationship	26.3%	26.0%	0.3%
Employment status			
Self-Employed	9.7%	9.3%	0.4%
Employed	53.2%	55.6%	-2.3%
Retired	16.7%	14.5%	2.2%
Other economically inactive	20.4%	20.7%	-0.3%

¹⁰ When combining the two FRS years the weighted sample size for 2023-24 was divided by 2 as the 2023-24 weighted percentages were based on the first 6 months of the survey.

	FRS (weighted by Gross4)¹⁰	PPLL (Weighted by PPLLW2_Wt)	difference
Tenure			
Rented	26.3%	26.2%	0.1%
Owned outright	40.1%	39.1%	1.0%
Owned with mortgage (including	33.5%	34.6%	-1.1%
Number of adults in household			
1	19.1%	19.0%	0.1%
2	60.7%	60.8%	-0.1%
3+	20.2%	20.2%	0.0%
Number of children in household			
0	70.0%	68.3%	1.7%
1	11.4%	12.0%	-0.5%
2	13.3%	14.0%	-0.7%
3	3.9%	4.2%	-0.3%
4+	1.4%	1.6%	-0.2%
Household composition			
Single Adult no children	16.6%	15.9%	0.7%
Couple no children	39.3%	38.7%	0.6%
Single parent HH	2.5%	3.1%	-0.7%
Couple with children	21.3%	22.1%	-0.7%
Multi adult HH	20.2%	20.2%	0.0%
Household income			
Under £200 a week	3.5%	3.3%	0.2%
£200 and less than £600	24.9%	24.5%	0.4%
£600 and less than £1000	24.9%	24.2%	0.7%
£1000 and less than £2000	32.3%	33.3%	-1.0%
Above £2000	14.5%	14.7%	-0.2%
Age of HRP			
16-44	18.5%	19.7%	-1.2%
45-54	27.8%	28.9%	-1.0%
55-64	29.1%	29.2%	-0.1%
65+	24.6%	22.3%	2.3%
Council tax band			
A (including unknown)	20.0%	20.6%	-0.7%
B	17.7%	16.5%	1.2%
C	19.8%	19.7%	0.2%
D	17.1%	17.5%	-0.4%
E	12.8%	13.8%	-1.0%
F	7.3%	6.8%	0.5%
G, H and I	5.4%	5.1%	0.3%
NS-SEC			
Managerial and professional	43.6%	44.4%	-0.9%
Intermediate	12.4%	12.5%	-0.1%
Small employer	9.5%	8.9%	0.6%
Lower supervisory and technical	6.0%	6.1%	-0.1%
Semi-routine and routine	24.0%	23.5%	0.5%

	FRS (weighted by Gross4) ¹⁰	PPLL (Weighted by PPLLW2_Wt)	difference
Not classified	4.5%	4.5%	-0.1%
Educational qualification			
Degree level qualification	34.6%	35.5%	-0.9%
Qualification below degree level	49.3%	49.4%	-0.1%
No qualification	11.4%	10.3%	1.1%
Missing	4.7%	4.8%	-0.1%
<i>Number of cases (sample size)</i>	<i>23045</i>	<i>4036</i>	

Table 7.7: Summary statistics for the weights of the PPLL achieved sample at each weighting stage

weighting stage	weight name	minimum weight	maximum weight	mean weight	Sample size		design factor (deft)
					achieved (n)	effective (neff)	
1	W1=GROSS4	540.0	10873.5	1292.9	4036	3058	1.15
2	W2	1.0	2.0	1.0	4036	4034	1.00
3	W3	1479.2	36964.9	3742.3	4036	2823	1.20
3	W4	0.2	6.6	0.9	4036	2811	1.20
4	W5	0.5	3.3	1.0	4036	3415	1.09
4	W6	0.1	8.7	1.0	4036	2174	1.36
5	PPLLW2_WT	0.1	9.3	1.0	4036	2077	1.39