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National Survey for Wales 2018-19

Technical Report

Mae'r ddogfen yma hefyd ar gael yn Gymraeg.

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National Survey for Wales 2018-19
Technical Report

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Views expressed in this report are those of the authors and not necessarily those of the Welsh Government

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Glossary

Term	Definition
Blaise	Statistics Netherland Blaise Enterprise 4.8
CAPI	Computer assisted personal interviewing
CASI	Computer assisted self-interviewing
HRP	Household Reference Person
IM	Interviewer manager
LA	Local authority
National Survey	National Survey for Wales
ONS	Office for National Statistics
PAF	Royal Mail Postcode Address File
SIM	Survey Instruction Manual
SPSS	Statistical Package for the Social Science – IBM SPSS Statistics
WG	Welsh Government
WIMD	Welsh Index of Multiple Deprivation

1. Introduction and survey overview

1.1 The National Survey is a survey conducted by the Welsh Government (WG), succeeding five surveys previously commissioned by WG and three of its sponsored bodies (Natural Resources Wales, Sport Wales, Arts Council of Wales). Before the survey was launched at the end of March 2016, a large-scale pilot survey and then a small-scale field test on the final questionnaire were conducted.

Overview of the 2018-19 National Survey for Wales

1.2 The third year of the new National Survey, carried out by the Office for National Statistics (ONS), ran from the beginning of April 2018 to end of March 2019. It involved conducting 11,922 interviews of people aged 16 and over based on a randomly-selected sample of residential addresses across Wales.

1.3 Interviews were carried out face-to-face by ONS interviewers using portable computers. The duration of the interview over the whole year was 49.6 minutes mean average (46.6 minutes median interview length). The National Survey consisted of a total of 73 main modules. These were designed to cover the range of topics specified by WG and its sponsored bodies such as:

- health (e.g. diet, alcohol consumption, smoking, and physical activity);
- childcare, and child education;
- climate change and environmental action;
- visits to the outdoors, participation in arts events, and sports activities;
- use of and satisfaction with public services;
- material deprivation and income;
- wellbeing and loneliness;
- use of and attitudes towards the use of the Welsh language;
- internet access and use; and
- tax devolution.

- 1.4 The exact questions can be viewed either in the 2018-19 questionnaire or in an interactive question viewer, both at the [questionnaires](#) section of the WG website.
- 1.5 Respondents received a £10 shopping voucher as a 'thank you' for taking part in the survey, which was sent to respondents after the interview by mail or email depending on their preference.
- 1.6 The survey questionnaire and all supporting materials were available as standard in both Welsh and English (pilot and mainstage survey), with interviews also offered in other languages with the help of an interpreter if required. Furthermore, for some topics sub-sampling was used to collect robust estimates at national level as efficiently as possible.
- 1.7 A total sample of 24,762 addresses was initially drawn from the Post Office small users Postcode Address File for the 2018-19 survey year. The sample was stratified by the 22 Welsh local authorities (LAs) with survey effort approximately proportional to the LA population size, with oversampling to ensure a minimum effective sample size of 250 in smaller LAs and 750 in Powys.¹ The number of interviews achieved in each LA over the survey year ranged from 312 in Isle of Anglesey to 1,057 in Cardiff. In Powys, 1,394 successful interviews were recorded over the year.
- 1.8 A small pilot survey² was carried out in January 2018 to test the new questionnaire and up-dated survey materials. The pilot survey provided an indication of the average interview length.
- 1.9 Cases were issued on a continuous monthly basis, with some cases being reissued the following month if thought likely to achieve positive outcomes.
- 1.10 Further development work was carried out by ONS during the survey period. This included two small-scale research trials that aimed to explore further measures to improve response rates on the survey. These trials were run as quasi experiments, whereby three quota areas across Wales were selected to build the control group, and a further three quota areas that were similar in previously achieved response rates, geography, population characteristics

¹ This was to enable sufficiently precise estimates at Health Board level for Powys and to avoid interview length in Powys being unduly long due to sub-sampling.

² The Pilot Report can be found at [National Survey for Wales: development work](#)

built the treatment group (see section 4 for more detail). Each quota area covered approximately 30 addresses and around 15 interviews per month.

- 1.11 The first trial (run between July and August 2018) aimed to explore whether there was an interviewer effect impacting on the response rate that could be achieved. The quasi experiment confirmed a statistically significant interviewer effect. A follow-up focus group with interviewers provided some insight into challenges, barriers and enablers to response, and highlighted potential improvements around training and support that could be implemented.
- 1.12 The second trial (run between September to November 2018) tested a tote bag as an unconditional non-monetary incentive, which was sent out as part of the advance materials. This incentive was offered in addition to the conditional £10 voucher that respondents receive on participation in the survey. This trial resulted in no statistically significant findings, and therefore the roll-out of this incentive was not considered further.

Structure of the report

- 1.13 This report is intended to provide a clear and accessible description of the approach taken to collecting and processing the data.
- 1.14 Following this introductory chapter, this report is divided into a further five chapters:
 - **Chapter 2** ('Sampling') describes the process of selecting addresses for the survey.
 - **Chapter 3** ('Questionnaire content and development') looks at both the process of developing questions for topic areas to include in the survey, and the development and testing that was conducted on the survey questionnaire and its computer implementation.
 - **Chapter 4** ('Fieldwork') covers the process of preparing interviewers for fieldwork, fieldwork procedures, interview numbers, response rates, and interview timings.
 - **Chapter 5** ('Data processing and output') gives an overview of the process of how the datasets were prepared and finalised.

- **Chapter 6** ('Weighting and non-response') describes the weighting process.

2. Sampling

Sample design

- 2.1 The National Survey is designed to be representative of all adults aged 16 or over living in private households in Wales. The annual sample is therefore set up as a stratified, single-stage random selection of addresses across Wales.
- 2.2 The sample was drawn from the Royal Mail Small Users Postcode Address File (PAF)³, whereby all residential addresses and types of dwellings were included in the sample selection process as long as they are listed as individual addresses.⁴ If included as individual addresses on the PAF, residential park homes and other dwellings were included in the sampling frame.
- 2.3 Sampled addresses were then clustered quarterly to ensure field work is allocated effectively.
- 2.4 The sample was stratified by LA using an allocation designed to ensure a minimum effective sample size was achieved in each LA, based on the estimated response rate (250 in each LA except Powys, where the minimum effective sample size is 750 in order to provide sufficiently precise estimates at local health board level).⁵ Population density and size at LA level were taken into consideration when drawing the sample, but some areas (e.g. small LAs) were oversampled in order to achieve samples large enough to ensure robust estimates.
- 2.5 Further sampling is applied within the questionnaire where certain questionnaire modules are only asked of a sub-sample of respondents (see paragraph 3.15).

³ More information on PAF licensing Centre can be found at the [Royal Mail website](#).

⁴ Residential addresses means private households across Wales. It excludes institutional accommodation (e.g. care homes, halls of residence, prisons, hotels and B&Bs, and army bases). People in institutional accommodation are typically not included in social surveys.

⁵ The complex nature of the sample design must be taken into account when computing the potential range of sampling errors. The impact of the design is often represented by the 'design effect' statistic. For example, a design effect of 1.3 indicates that the actual sample size should be divided by 1.3 to obtain the statistically *effective sample size*. The statistically effective sample size is the equivalent simple random sample size that would yield the same magnitude of sampling errors. The design effect varies for each measure in the survey.

2.6 The sample was initially allocated using a proportionate allocation, meaning that the sample size in each LA is proportional to size based on the number of addresses in that LA. To ensure the minimum effective sample size in each LA, the allocation was then modified as follows:

- a) LAs where the minimum effective sample size was not likely to be achieved were identified.
- b) In those LAs, the sample size was set to this minimum and the rest of the sample was allocated with probability proportional to size.
- c) Steps (a) and (b) were conducted iteratively until the minimum effective sample size was achieved for all LAs.

2.7 The LAs that were oversampled in this way were Isle of Anglesey, Blaenau Gwent, Ceredigion, Denbighshire, Merthyr Tydfil, Monmouthshire, Powys, and Torfaen.

2.8 Within each sampled household, an individual interview was attempted with one adult aged 16 or over. Where a household contained more than one adult (aged 16 and over), a single adult was randomly selected.

Selection of addresses (including reserve sample)

2.9 Due to response rates being lower than anticipated during the first two survey years, a sample of 24,762 addresses was selected for the main sample, stratified by LA (see previous section). The 2018-19 sample contained around 1,200 more addresses than the previous year (and 3,500 more than 2016-17) to ensure more interviews could be achieved over the course of 2018-19.

2.10 To select addresses for inclusion in the survey, the PAF was ordered by postcode and a systematic sample⁶ of addresses was selected from each LA using the target sample size in each LA. Addresses sampled within the last four years for any ONS social survey or for part of the 2014-15, 2016-17 or 2017-18 National Survey for Wales were excluded using the ONS Social Survey Used Address File, a list of addresses sampled for social surveys that

⁶ Addresses are ordered by postcode, followed by randomly choosing a starting point in this list and subsequently selecting every nth address (depending on the required proportion within each LA).

are run by the ONS. Addresses selected for any ONS survey including the National Survey are not reselected for the National Survey for four years after they were initially sampled.⁷

- 2.11 Given the uncertainties around variation in response and eligibility rate a reserve sample equal to that of the main sample was drawn, also stratified by LA, through the method outlined above, albeit independently from the main sample. As it was unknown at the time the reserve sample was drawn, in which area additional cases may be required, the sample was drawn of equal size to provide the opportunity to boost the main sample at any given point and any area required. However, only a small proportion of the overall reserve sample would ever be used. The reserve sample for 2018-19 was used to provide a sample for the 2018 pilot test.
- 2.12 Table 2.1 below shows an overview of the sample distribution across LAs. This has changed slightly since 2017-18 to consider the sample outcome and experience gained during 2017-18 of what level of response can be achieved in each local authority on the new National Survey. The sample size for 2018-19 was therefore adjusted taking account of the levels of response and ineligibility rates at local authority level achieved during 2017-18, aiming to increase the number of achieved interviews.

Sampling for the 2018-19 response research trials

- 2.13 Due to two small scale research trials (see section 4 for more detail) run over the course of July to November, some changes were applied to the main sample. For each of the two trials six paired quota areas were selected that were similar in characteristics, whereby three formed the control area and three the experiment area.
- 2.14 As quota areas usually differ from month to month, it was crucial for these two research trials to keep the selected areas constant over the research period to avoid any area effects (see section 4). As the trials were only conducted at a small scale this would not impact on the survey sample overall.

⁷ The exact period for which addresses are excluded from re-selection varies from survey to survey.

2.15 In order to accommodate the two trials, the monthly sample allocation was adapted, by ideally retaining quotas already allocated within the research trial months and areas, or by swapping the sampling month of quotas already allocated to the area but scheduled for later in the year. When no quotas were available for the area, new addresses randomly selected from the PAF within the trial areas were used. The following graph illustrates the occurrence of each of these three options.

Figure 2.1: Changes applied to quota allocation from July 2018 onwards

First Trial	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
A1	Blue	Blue						
A2	Blue	Blue						
B1		Yellow	Yellow	Yellow				
B2	Blue	Blue						
C1		Yellow		Yellow				
C2	Blue	Yellow			Yellow			
Second Trial	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
D1			Green	Blue	Blue			
D2			Blue	Blue	Green			
E1			Blue	Blue	Blue			
E2			Yellow	Blue	Blue			Yellow
F1			Blue	Blue	Blue			
F2			Blue	Blue	Blue			

- New quota of addresses selected
- Quota of addresses swapped with another month
- Quota of addresses retained

In total, 629 new addresses were selected to replace addresses in the originally drawn sample. This resulted in only minor sample size changes at LA level, whilst the overall sample size at Wales level was maintained. Table 2.1 illustrates the changes at LA level.

Table 2.1: Number of addresses included in main sample by LA

Local authority	Originally drawn sample	Final issued sample size
Anglesey	725	725
Blaenau Gwent	877	877
Bridgend	936	936
Caerphilly	1,160	1,160
Cardiff	2,300	2,293
Carmarthenshire	1,194	1,194
Ceredigion	725	725
Conwy	822	830
Denbighshire	786	786
Flintshire	916	916
Gwynedd	860	860
Merthyr Tydfil	722	721
Monmouthshire	870	870
Neath Port Talbot	1,061	1,061
Newport	978	978
Pembrokeshire	963	963
Powys	2,803	2,803
Rhondda Cynon Taf	1,700	1,700
Swansea	1,719	1,719
Torfaen	801	801
Vale of Glamorgan	906	906
Wrexham	938	938
Total	24,762	24,762

Sample batching and allocation

2.16 The main 2018-19 sample was divided into quotas (address clusters) and then allocated to months. The quotas were allocated based on their average WIMD⁸ score, ensuring that there was a mixture of high, low and medium scoring quotas within each quarter for each LA. It was deemed that the spread across LAs and WIMD scores would ensure that the quarterly sample

⁸ Welsh Index of Multiple Deprivation

is representative of the population. As not all areas are covered in each quarter, the quarterly sample is clustered.

- 2.17 These quotas were allocated by Interviewer Managers (IMs) to Field Interviewers who would then work to achieve response from these issued addresses across the month.
- 2.18 An average quota contained around 27 cases. The largest quotas allocated in 2018-19 included 39 cases. The number of addresses allocated per month from the main sample ranged between 2,035 (March 2019) and 2,088 (September 2018).
- 2.19 Some addresses, which did not have a successful outcome during the survey month but based on their outcome and notes from the interviewer were assessed as still having reasonable probability of achieving an interview, were reissued to Field Interviewers the following month. This assessment considered the outcome at mainstage, including for cases that were non-contacts and circumstantial refusals (e.g. on holiday, or currently ill), and information provided by the mainstage interviewer on the likelihood of success if the case was reissued.
- 2.20 Usual ONS practice for social surveys is for reissues to be allocated and attempted roughly three weeks after the end of the survey month, ideally by the same interviewer. However, since other considerations, such as availability of field force, have to be taken into account, a reissued case may be pursued by a different interviewer. In some circumstances, and at the discretion of interviewer managers, cases can be reissued to a different or more experienced interviewer. Interviewers are then allowed around 10 days to attempt to achieve an interview before returning their re-issue casework back to the head office.

Selection of dwelling units, households and individuals

- 2.21 In circumstances where an interviewer found more than one dwelling (e.g. a block of flats) or more than one household (e.g. two or more bedsits) at a sampled address, a single dwelling/household was randomly selected using

a Kish Grid⁹. Interviewers were instructed to inform head office in such circumstances for head office to update the sample register (in the instance of multiple addresses) and also to provide support, if necessary, where it was not clear how the random selection should be carried out (e.g. where flats or household units were not numbered).

- 2.22 Within the sampled household, one adult (aged 16 and over) was interviewed for the survey. If there was more than one person aged 16 and over resident at the address a respondent was randomly selected, again using a Kish Grid.
- 2.23 In order to make the person selection using the Kish Grid, interviewers were instructed to ask the responding household member about the ages of all household members (aged 16 and over) and rank them from oldest to youngest. Based on this information, and the address number assigned to the address within the quota, the Kish Grid would indicate which resident was eligible to be interviewed.
- 2.24 For example, if the address number in the quota was 4, and there were three residents aged 16 and over at the address, the random number taken from the Kish Grid indicates that the second oldest resident (2) would be the selected respondent (see Annex A).

⁹ A Kish Grid is a table of random numbers used in the process of randomly selecting members within a households, or residential units within a dwelling.

3. Questionnaire content and development

Overview of the questionnaire

- 3.1 The survey design is based on a single questionnaire administered to one randomly selected adult aged 16 or over in each sampled household. The questionnaire content was developed by WG and the three sponsored bodies. An annual questionnaire review and stakeholder consultation is carried out by WG to establish new policy needs and determine the questionnaire content for the new survey year. In addition, a feedback questionnaire was issued to interviewers to get their views on how well the survey processes worked in the field, whether there were any specific issues with the questionnaire content or flow, and whether there was room for improvement. WG have considered the interviewer feedback during the development of the content for the 2018-19 questionnaire. The core [questionnaire](#) from April 2018 covered a range of different topics, including public services, wellbeing, personal health, arts, and sport participation. A full list of modules included in the final questionnaire is published on the WG website¹⁰.
- 3.2 A [small scale pilot](#) survey was conducted by ONS in January 2018 to test the questionnaire worked well, as well as testing fieldwork processes.

Questionnaire content and development

- 3.3 In 2016-17, questions for the National Survey were largely taken from the five predecessor surveys, with some questions taken also from other large-scale surveys. Changes for consecutive years include small up-dates to individual questions that were continued from year to year, discontinuing or pausing certain questionnaire modules that do not need to be asked every survey year, as well as introducing new questionnaire modules and individual questions.

¹⁰ The full list of modules can be found at [National Survey for Wales: questionnaires](#)

- 3.4 Further information on the content of the final 2018-19 questionnaire and the background to questions asked in the survey can be found on the [WG website](#).

Questionnaire programming and testing

- 3.5 The questionnaire was scripted by ONS and administered using Statistics Netherlands Blaise Enterprise 4.8 (“Blaise”).
- 3.6 WG identified a number of questionnaire modules where survey estimates are only required at national, local health board, or regional level. Therefore, some questionnaire modules were not asked of all respondents, which helped to keep the average interview length down to around 45 minutes. Relevant sections were programmed to be asked of a randomly selected sub-sample of respondents only, and occasionally within bespoke geographies. Annex B provides an overview of sub-sampled modules, the required annual sample size, and geographical considerations.
- 3.7 When programming the questionnaire script in Blaise, ONS included a number of soft and hard checks so that interviewers would be alerted to cases where a combination of answers would be unlikely or unfeasible. Where a combination of answers was unlikely, a soft check alerted the interviewer to the answers provided and asked them to double check the response before proceeding - but allowed them to proceed if this information was confirmed to be correct (e.g. interviewer enters a date of birth giving an age of 120 years). A hard check was triggered when it was apparent that the combination of answers provided was not possible (for example a son/daughter had been coded as being older than their mother/father). In these cases, the interviewer could not proceed through the rest of the questionnaire until this information had been corrected. These checks ensured that inconsistencies in the data would be dealt with at the interviewing stage improving the quality of the data.
- 3.8 To ensure that the final script was running smoothly and was set up according to specification the following checks were conducted by ONS and WG:

- **Question text** – that this matched the questionnaire specification throughout.
- **Question routing** – that the script had been programmed in accordance with the specified routing – this was tested by using a number of different household and response scenarios.
- **Question numbers/names** – that these matched the numbers/names in the questionnaire specification where relevant.
- **Screen display** – that questions were formatted according to ONS standard and displayed clearly avoiding any unnecessary scrolling for interviewers.
- **Response lists** – that these matched the questionnaire specification and were displayed clearly avoiding any unnecessary scrolling for interviewers.
- **Interviewer instructions** – that these were clear and matched the questionnaire specification.
- **Showcard references** – that the numbers matched both the questionnaire specification and the set of showcards.
- **Textfill** – that any questions or text within questions were being displayed correctly.
- **Computer assisted person interviewing (CAPI) checks** – that all soft and hard checks in the CAPI were being triggered when applicable.
- **Script movement/reliability** – that the script allowed interviewers to move forwards (and back, if they needed to amend the information entered) without loss of data or other errors.
- **Language selection** – that the data collection tool allowed interviewers to select a language at the beginning of the interview and remain in this language, and toggle between English and Welsh if required by the respondent.
- **Translation** – that the questionnaire flowed well in both Welsh and English.

3.9 In addition to the above checks, ONS also ran a 'data flooding' exercise on the final main stage script, which generated a number of dummy interviews. This acted as a final check that all questionnaire routing, in particular routing for sub-sampled sections based on randomisation, was set-up as specified.

- 3.10 A raw SPSS¹¹ data set (.sav) based on the first 250 interviews was also provided to WG to check the frequencies at each question and sub-sampling fractions. These stages of checking were used to identify problems with the CAPI script.

Showcards

- 3.11 Two sets of showcards, i.e. respondent visual aids providing question choices or contextual information (e.g. size of food portions), were developed. The “main” showcard set comprising question-specific aids was produced in an A5 English-only booklet for every interviewer and an A4 bilingual version for interviewers conducting Welsh language interviews. A second “core” set included two common scoring lists that were included throughout the questionnaire. The core set was produced in the same format as the main showcards. All showcards can be found on the WG website.¹²

Welsh translation

- 3.12 WG provided a questionnaire specification that was translated into Welsh. The aim was to have a Welsh language version of the questionnaire that could be understood across all parts of Wales. The translated version was provided to ONS once the specification for the English version of the questionnaire was finalised. Where questions were taken from previous bilingual surveys, established translations were used for consistency and continuity purposes. For any new or amended questions, WG used certified translators ensuring that the same terminologies were used throughout the questionnaire. Both ONS and WG research teams had access to Welsh speakers for quality assurance of the translation, as well as minor clarifications and alterations.
- 3.13 ONS used the English questionnaire specification to set up the questionnaire routing. The Welsh text was later included in the relevant place holders within the script, with relevant adjustments made to text fills to accommodate Welsh

¹¹ Statistical Package for the Social Sciences. IBM SPSS Statistics

¹² All showcards can be found at [National Survey for Wales: questionnaires](#).

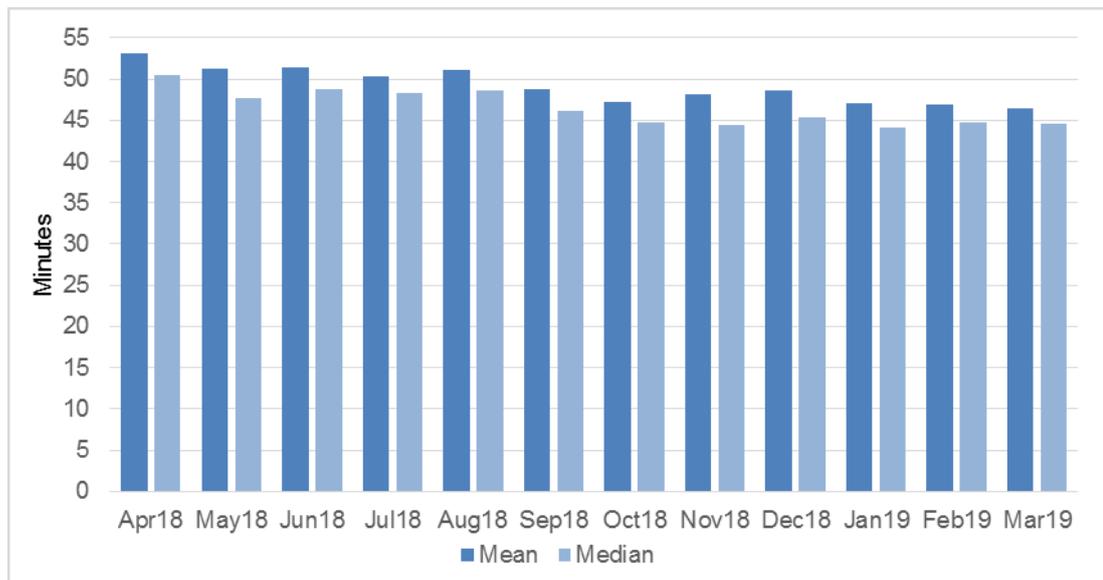
grammatical differences. The English language and the Welsh language version of the CAPI were tested independently.

- 3.14 Interviewers coded the respondent's preferred language at the start of the interview. The Blaise program allowed interviewers to toggle between English and Welsh for any question at any point throughout the questionnaire. This was intended to help in situations where respondents choosing to do the interview in one language but requiring an instant translation of a question or specific wording for anything that they may have had trouble understanding in the chosen interview language.
- 3.15 If the interview needed to be delivered in a language other than English or Welsh, interviewers read out the questions in English and an interpreter translated accordingly. This would either be another member of the respondent's household or the interviewer could use a telephone translation service to complete the interview. In these situations, certain modules considered as sensitive were not asked to avoid issues around confidentiality through disclosing information to a third person.
- 3.16 The questionnaire was translated by a WG contractor, the advance materials by an ONS contractor. Further tweaks/small changes applied to either questionnaire or advance materials were made by both the WG and ONS teams.

Interview timings

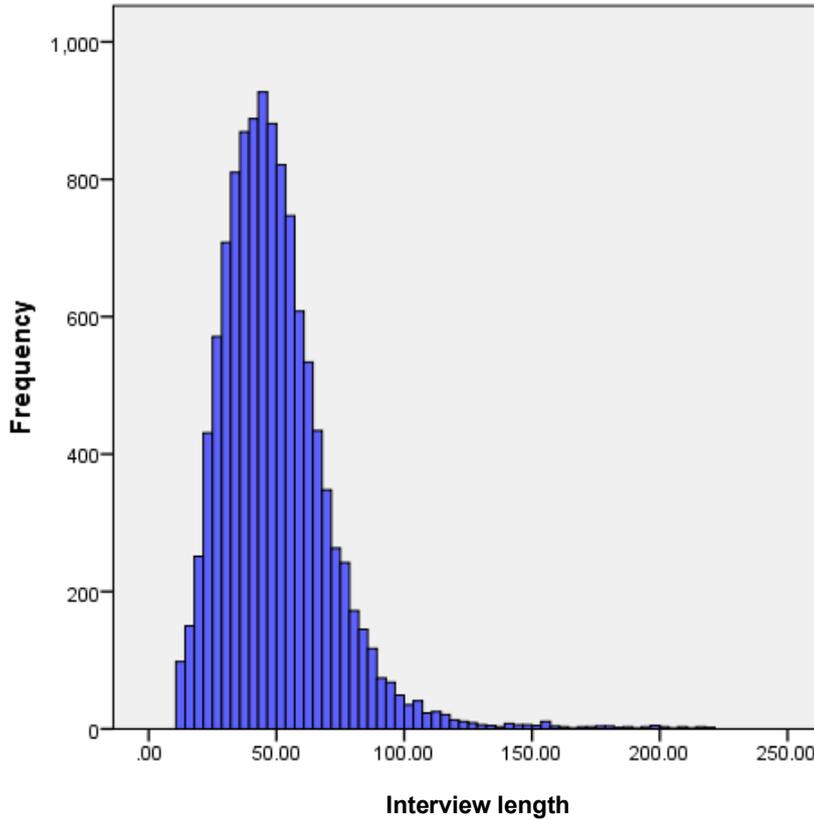
- 3.17 A number of timing points were included in the questionnaire to measure the length of each section. In addition to that, audit trail data was used to estimate the total questionnaire length as well as length of individual questions where timing points were not accurate enough. Figure 4.1 shows the change in mean and median questionnaire length over the course of the survey year.

Figure 2.1: Average interview length by survey month



- 3.18 Annex C provides an overview of the median and mean length of each section of the questionnaire. These figures represent the average timings for each section across the full sample, which means that where certain questions were not asked (e.g. as a result of sub-sampling) of a respondent, the question time was set to zero for relevant cases.
- 3.19 As explained in section 3.15, a sub-sampling approach was applied to the survey, resulting in certain modules being asked of some respondents but not others. Figure 3.2 provide an overview of the distribution of interview length. The median interview length was around 46.6 minutes (mean 49.6 minutes), with 50% of respondents having an interview lasting between 35 and 60 minutes.

Figure 3.2: Distribution of interview length in minutes



Changes to the questionnaire

3.20 A number of changes were introduced to the questionnaire during the survey year; most of them related to up-dating sub-sample fractions to ensure the target sub-sample sizes could be achieved by the end of the survey year. The main changes consisted in the following:

- June 2018 – Up-dated the wording of questions relating to stamp duty in the ‘Tax Devolution’ module to reflect the fact that the stamp duty is now a devolved government responsibility. The sub-sampling was up-dated in line with the wording change to take account of the sub-sample size being calculated on the basis of 10 instead of 12 months. (April and May responses excluded from analysis.)
- September 2018 – Simplified and translated soft and hard checks to be consistent throughout the questionnaire.
- September 2018 – Up-dated the school look-up tables for the primary and secondary school modules.

- September 2018 – Added two interviewer questions in administrative module for interviewers to indicate in the instance of a circumstantial refusal whether the selected household member was ineligible due to mental health reasons.
- October 2018 – Changed the timeframe for IntSkills in the ‘Internet Use’ module from four weeks to three months.
- October 2018 – Further streamlining of soft and hard checks for consistency reasons.
- February 2019 – Up-dated the reference to the name of the Welsh First Minister in the introduction of the ‘Satisfaction with Welsh Government module’.

4. Fieldwork

Recruitment of interviewers

- 4.1 All ONS interviewers are directly-employed members of staff, who are salaried based on their contracted hours (including interviewing time as well as time for travelling and administrative purposes). They are not paid specific fees per achieved interview and other specific survey activities. Instead their salary covers, all duties associated with their posts including training, preparation of work, travelling to locations, etc. Furthermore, interviewers are flexible in the hours they work to fit in with demand and calling patterns required to optimise field work and promote data quality.
- 4.2 Interviewer vacancies were advertised on the [Civil Service Jobs](#) site. Typically, after an initial round of application screening and selection, successful candidates are invited to a competency-based interview held by telephone, in order to speed up the process of getting suitable people into posts.
- 4.3 Recruitment, training and briefing of new interviewers continued throughout the survey period. Before new interviewers were briefed on the National Survey, they had to complete standard ONS interviewer training, which included working on quotas for other surveys run by ONS such as the Labour Force Survey.
- 4.4 A total of 119 interviewers and 7 interviewer managers and have been briefed on the National Survey since April 2018, with between 73 and 86 interviewers working on the survey every month (Table 4.1). Due to a slightly higher number of newer interviewers working on the survey over the course of the year, more quotas were split between interviewers to manage the settling in process, which resulted in a slightly higher number of interviewers working on the survey compared to the previous survey year. There were seven Welsh speaking interviewers and one Welsh speaking interview manager.

Table 4.1: Number of interviewers by months of survey¹³

Month	Total number of ONS interviewers in Wales	Number of interviewers assigned to the survey *
April 2018	104	73
May	102	76
June	104	82
July	106	80
August	107	85
September	106	83
October	111	79
November	110	85
December	109	86
January 2019	115	84 (15)*
February	117	84
March	119	80

* Interviewer numbers in this column only cover interviewers working on the survey during the mainstage field months. In January 2019, 15 interviewers were working on the pilot test for the 19-20 survey.

Briefing of interviewers

4.5 All interviewers attended a briefing day. The content of the briefing day covered:

- **Background to the survey** – explaining the progress made on the survey, highlighting achievements against targets and any new developments on the survey.
- **Call requirements and documents** – reiterating fieldwork procedures, in particular where they differed from ONS standard procedures such as the use and administration of survey materials.
- **Questionnaire content** – providing an overview of all areas in the questionnaire plus some background information on sub-sampled modules, specifically highlighting sections that required more detailed briefing on how they needed to be administered.

¹³ Number of interviewers in the table below refer to head counts rather than full-time equivalent (FTE) numbers. Interviewers' hours are, on average, 0.6 FTE.

- **CASI administration** – explaining the content and sensitivity of questions in this section, explaining the purpose of practice questions, and how to help respondents complete in CASI.
- **Data protection and linkage** – highlighting a General Data Protection Regulation (as a successor of the Data Protection Act) and its meaning, explaining the importance and benefit of linking survey data with other administrative records, providing background information of planned data linkage for National Survey data, explaining the handling of the data linkage show card, leaflet and flow chart.
- **Field administration** – covering general information on survey administration.

4.6 Prior to the briefings, interviewers were provided with learning material in the form of training cases, and a Survey Information Material (SIM) document containing details of the survey scope, stationery, field periods, questionnaire help notes and survey administration information. For further information on the scope of the survey please refer to the WG website, where a document covering the reasons for including the various questions (which formed the basis of the SIM) is available.¹⁴ The SIM can be made available on request.

Supervision and quality control

4.7 ONS uses an established set of measures to keep track of the quality of their interviewers' work. The key features of this approach are:

- using clear targets against which interviewer performance can be monitored;
- quality control checks with participants to understand how they experienced the interview; and
- regular performance reviews to get a more qualitative understanding of how interviewers are doing.

¹⁴The questionnaire guidance document can be found at [National Survey for Wales: questionnaires](#)

- 4.8 While quality indicators are essential in monitoring the key aspects of interviewers' work, there are some aspects of fieldwork quality that can only be assessed by speaking to participants themselves.
- 4.9 To do this ONS uses a 'call-back' system whereby up to 10% of all productive cases are contacted by telephone and asked a short set of questions to ensure quality standards and processes are being met. The results of quality control calls are included in interviewers' performance review. If there is any reason for immediate concern, the case is escalated instantly.
- 4.10 The addresses selected for re-contact were selected systematically based on a rotating approach and ensured that all interviewers have their work validated on a regular basis. Approximately 10% of the case work interviewers worked on over the course of the 2018-19 survey year were checked, and all of the addresses were verified as valid interviews.

Fieldwork dates, management and procedures

- 4.11 Fieldwork started with the beginning of April 2018 and ended with end of March 2019. Advance letters and survey leaflets were sent by ONS field office approximately two weeks prior to the start of each monthly field period. Interviewers were responsible for sending out follow up postcards to the addresses in their assigned quotas. This ensured that delivery of the materials could be timed to coincide closely with when interviewers planned to make their calls.
- 4.12 Interviewers were encouraged to start their assignments as soon as possible in the month of issue and were given one calendar month to cover each assignment and send back their final outcomes. However, the exact fieldwork period set for an interviewer to work each assignment varied depending on the number of addresses assigned and extensions granted to complete quotas or scheduled appointments.
- 4.13 A proportion of unproductive addresses, usually non-contacts or refusals on first issue, were re-scattered to field interviewers as reissues subsequent to the end of the mainstage period. Re-issued addresses were prioritised based

on the likelihood of achieving successful interview. Re-issue remarks were provided by the original interviewer at main stage on a standardised scoring scale.

- 4.14 Interviewers called at different times of day and on different days of the week, including weekends and evenings. Interviewers should aim to make minimum of six calls during a mainstage month, with at least two calls on a weekday evening (after 6pm) or at the weekend before cases could be coded as non-contact. There was no maximum limit on the number of calls with interviewers being instructed to continue to call at addresses while they felt there was still a chance of making contact. Where interviewers were not able to make enough calls, or felt that there was value in pursuing the case further for other reasons (e.g. respondent currently ill or on holiday), the case was re-issued in the next fieldwork month. A record of the time, date and outcome of the call was documented, and calling patterns were regularly checked as part of the interviewer's performance management review. During 2018-19 interviewers made on average three calls to achieve an interview. Around two calls were made until an interviewer could establish that the address was ineligible, three calls on average until a case was coded out as a refusal, and six calls on average for non-contacts. Cases resulting in a circumstantial refusal (e.g. too busy, or currently unwell) or non-contact at mainstage were reissued to ensure that hard-to-reach cases were covered in the survey population.
- 4.15 Fieldwork was managed on a daily basis by a team of Interview Managers working with an overall Field Project Manager. Members of the ONS National Survey Field and Research teams oversaw fieldwork and monitored the rate of progress on a daily basis. Weekly updates were sent to WG including the overall rate of progress against targets. A breakdown of the figures at LA level was provided fortnightly.

Fieldwork documents

- 4.16 Only very minor changes had to be made to survey documents for the new survey year. A line at the bottom of any letter used as part of the National

Survey materials was added informing residents of selected addresses that WG and ONS are happy to communicate in Welsh and English.

- 4.17 The WG-branded advance letter and leaflet were posted centrally by the head office 10 days before the start of the mainstage month. Interviewers were furnished with a stock of the new A5 postcards, which were posted by the interviewer a week before their first visit to the addresses of their assigned quotas.
- 4.18 The latest versions of the most important survey materials used on this survey during 2018-19 are included in Annexes D to G.
- 4.19 The full set of documents used for this survey shown in Table 4.2, along with a brief description of each document.

Table 4.2: Survey materials

Document	Description
WG advance letter (see Annex D)	<ul style="list-style-type: none"> • Sent in advance to all sampled addresses • Informs household that address had been selected to take part in the survey • Includes basic information about the survey • Dual language • During the incentive experiment, two different versions were used – one mentioned the incentive, the other did not
WG leaflet (see Annex E)	<ul style="list-style-type: none"> • Sent with the advance letter. • Includes more detail on points covered in the letter, data infographics examples and contact information • Dual language
A5 postcard (see Annex F)	<ul style="list-style-type: none"> • Sent by interviewers before calling at the address. • Reminding the household that an interviewer will call at the address. • Dual language
Survey envelope	<ul style="list-style-type: none"> • Used for posting advance letters/leaflets • Includes Welsh Government and ONS logo on the front
Core showcards	<ul style="list-style-type: none"> • Single laminated A4 card showing the two common lists

Document	Description
	<p>that were included throughout the questionnaire.</p> <ul style="list-style-type: none"> • Dual language
Main showcards	<ul style="list-style-type: none"> • This included all prompted response lists aside from those included in the core showcards • An English-only A5 booklet and a dual-language A4 booklet
Survey Interview Manual	<ul style="list-style-type: none"> • A set of instructions provided to interviewers. • This included further detail on the survey requirements / procedures to follow
Refusal conversion; Impediment to contact; Calling today cards; Appointment card; Broken Appointment card; and General Message pad	<ul style="list-style-type: none"> • Interviewers were provided with WG-branded field material, which they could leave at addresses where the interviewer had problems making contact with anyone living at the address, the interviewer received an initial refusal; there was no answer to say they had called; confirm details of an interview appointment; leave reminders or general messages to respondents • Dual language
Data linkage documents (Annex G)	<ul style="list-style-type: none"> • Interviewers were provided with a number of documents relating to the data linkage process, to help familiarise themselves with this and for providing information to respondents • The documents provided were: a data linkage showcard, and a flowchart. • Dual language
A5 work sheets	<ul style="list-style-type: none"> • Used for each address in the interviewer's assignment. • A Kish Grid was included providing interviewers with the relevant random numbers for the respective address in their quote to allow them to select the correct household and individual at the sampled address. • During the incentive experiment, the assignment sheet indicated which addresses were being offered an incentive
Kish Grid	<ul style="list-style-type: none"> • A pre-assigned table of random numbers to identify the

Document	Description
(see Annex A)	person to be interviewed at each address. A 40 addresses grid was used based on the maximum number of addresses in a quota.
Infographic sheets for interviewers	<ul style="list-style-type: none"> • A brief infographic sheet (at LA level) of previous WG / sponsored body survey results. • Intended to help with refusal conversions. • Dual language
Thank you leaflet (Annex H)	<ul style="list-style-type: none"> • ‘Thank You’ leaflets, handed out by the interviewer at the end of the interview. • The leaflet thanked the participant for their participation and provided contact details for organisations providing further information and support on subject areas related to the survey.

Web pages about the survey

- 4.20 The [WG website](#) hosts respondent-specific survey information. This web address is highlighted in survey materials as an additional source of information for respondents and to reassure them that the survey is genuine.
- 4.21 In addition to that ONS set up a webpage hosted on the [ONS website](#) specifically for the National Survey, to inform respondents and the general public about ONS’ role as the organisation commissioned to conduct this survey on behalf of WG.
- 4.22 A separate set of web pages aimed at survey users rather than respondents is hosted at the [National Survey for Wales website](#). This includes background information on the survey, a description of the survey method and questionnaire coverage, latest news (for example, when new data or reports are being release), results and reports from the development work, and further information on data linkage. Electronic copies of the survey materials are also included on the website.
- 4.23 Information on these web pages is available in Welsh and English.

Welsh language and other language interviews

- 4.24 All respondents were offered the opportunity to complete the interview in English or Welsh. To ensure that the survey was accessible in Welsh, all survey documents were provided in both Welsh and English. Furthermore, a number of interviewers were Welsh native speakers or learners at different levels. In total seven interviewers were trained to conduct Welsh-language interviews.
- 4.25 The survey leaflet provided a Freephone number that respondents could call to arrange for a Welsh-speaking interviewer. Welsh language interview requests where the original interviewer was a trained Welsh language interviewer were completed by the same interviewer. Alternatively, for cases where the interviewer assigned to the address was not trained in Welsh language interviews, the interviewer was instructed to contact the ONS Field Office to log the request. The record was then immediately passed to a Welsh-speaking interviewer who could contact the respondent directly and arrange to conduct the interview on a suitable day for the respondent.
- 4.26 In a small number of cases respondents were not able to complete the interview in English or Welsh (Table 4.3). In these cases, the interview was conducted with the help of a household translator (aged 14 or over), who translated the questions into the respondent's chosen language and then passed their answers back to the interviewer in English.
- 4.27 In such situations, the questionnaire script automatically routed out a number of sensitive questions in these interviews. These were questions that were felt to be inappropriate to ask in the presence of other household members or interpreters (e.g. Warwick-Edinburgh Mental Wellbeing Scale, experience of loneliness, sexual identity).

Table 4.3: Language of interview

Language	Frequency	Percent
English	11,756	98.6
Welsh	159	1.3
Other	7	0.1
Total	11,922	100.0

Process of making contact at a sampled address

- 4.28 Interviewers were issued with address sheets for each address in their quota including the address information as well as a Kish Grid with the random numbers for the relevant address in their quota, to enable them to select the right household and individual at the sampled address (see section 3.22). In addition, interviewers used the questionnaire tool on their laptop to record call attempts made, as well as information on the household composition when contact was made.
- 4.29 Interviewers needed to go through the following steps when calling at a sampled address:
- 1. Confirming the address:** The first task for interviewers was to confirm the address for themselves before making contact, to ensure they were calling at the correct address and then to confirm this with someone living at the address when introducing the survey.
 - 2. Confirming address eligibility:** For each address interviewers needed to confirm that it was traceable, residential and occupied as a main residence.
 - 3. Recording number of dwelling units:** Interviewers needed to establish the number of dwelling units at the address. In most cases this was one; if it was more than one (most commonly when an address had been split into flats) they were asked to inform head office, who would up-date and re-issue the quota accordingly with one of the addresses selected at random.
 - 4. Recording the number of households:** In a small number of cases it may be possible that more than one household lives in a single dwelling

unit. ONS uses the standard household definition from the Census for England and Wales, which defines a household as: *'a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area'*. In cases where there was more than one household at a sampled address, interviewers were instructed to use the Kish Grid to establish which household unit would be the correct one to select. Interviewers were advised to re-confirm their household selection with head office in particular if the selection process was unclear (e.g. if the units were not enumerated).

- 5. Recording the number of adults aged 16 or over:** Following the dwelling unit and household selection, the interviewer then needed to establish the number of adults (aged 16 and over) living at the selected address and their respective ages in order to rank them from the oldest to the youngest. Once this was done one person had to be selected at random using the Kish Grid provided. In households where there was only one adult aged 16 or over, no person selection was required.
- 6. Gaining parental permission:** In cases where the selected respondent was aged 16 or 17 and living with a parent/guardian, the interviewer needed to gain parental permission before undertaking an interview. To do this they needed to enter the name of the person giving permission and their relationship to the respondent into the CAPI questionnaire. No signature was required to support this.
- 7. Recording the respondent's chosen interview language:** The interviewer confirmed at door step what the respondents preferred choice of language for the interview is. At the start of the interview the interviewer indicated the language of choice in the CAPI questionnaire, to ensure the remainder of the questionnaire appears in the correct language (Welsh or English). For languages other than Welsh and English, the questionnaire was displayed in English but delivered with the help of an interpreter (see section 5.22).

Sample outcomes

4.30 A total of 47.7% of the issued sample (54.2% of the eligible sample) resulted in successful interviews (Table 4.4). The second most frequent outcome was refusals to interview, including broken appointments, which accounted for over 26.6% of the issued sample (30.2% of the eligible sample). Non-contacts accounted for around 4.6% of the issued sample (5.2% of the eligible sample). Tables 4.4 and 4.5 show the sample outcomes for all sampled addresses.

Table 4.4: Sample outcomes at national level

Outcome code description	Total addresses*	% of issued sample	% of eligible sample
Eligible			
Complete interview by required respondent(s) / selected person	11,905	47.7%	54.1%
Complete interview: partly by required respondent(s) / selected person and partly by proxy	17	0.1	0.1%
No contact with anyone at the address	1,145	4.6	5.2%
Contact made at the address, but not with any member of the sampled dwelling/household	163	0.7	0.7%
Contact made at sampled dwelling/household, but not with any responsible resident	37	0.1	0.2%
Contact made with responsible member of sampled dwelling/household, but not with sampled person	221	0.9	1.0%
Office (HQ) refusal	505	2.0	2.3%
Information refused about number of dwellings/household at address	1	0.0	0.0%
Information refused that would allow identification of required respondent(s) within dwelling or household.	16	0.1	0.1%
Refusal by required respondent / selected person	5,098	20.4	23.2%
Refusal by proxy	673	2.7	3.1%
Refusal of access to site	3	0.0	0.0%
Refusal during interview	52	0.2	0.2%
Broken appointment, no re-contact	823	3.3	3.7%
Ill at home during survey period: notified to head office	11	0.0	0.0%
Ill at home during survey period: notified to interviewer	377	1.5	1.7%
Away/ill in hospital throughout the field period: notified to head office	5	0.0	0.0%
Away/ill in hospital throughout the field period: notified to interviewer	439	1.8	2.0%
Physically or mentally unable/incompetent	1	0.0	0.0%
Physically or mentally unable/incompetent: notified to head office	16	0.1	0.1%

Outcome code description	Total addresses*	% of issued sample	% of eligible sample
Physically or mentally unable/incompetent: notified to interviewer	357	1.4	1.6%
Language difficulties: notified to head office	2	0.0	0.0%
Language difficulties: notified to interviewer	39	0.2	0.2%
Lost interview	27	0.1	0.1%
Full interview achieved but respondent requested data be deleted	1	0.0	0.0%
Partial interview achieved but respondent requested data be deleted	1	0.0	0.0%
Issued but not attempted	20	0.1	0.1%
Inaccessible	9	0.0	0.0%
Unable to locate address	22	0.1	0.1%
Unknown whether address is residential due to non-contact	10	0.0	0.0%
Unknown whether there are eligible resident(s) due to non-contact	17	0.1	0.1%
Ineligible			
Not yet built / under construction	47	0.2	-
Demolished / derelict	108	0.4	-
Vacant / empty	1,631	6.5	-
Non-residential address	399	1.6	-
Address occupied, but no resident household/resident(s)	651	2.6	-
Communal establishment / Institution	82	0.3	-
Directed not to sample at address	46	0.2	-
Total issued sample	24,977	100.0	-

* Reissues for February and March 2018 are included.

Table 4.5: Sample outcomes at local authority level

Local Authority	Interviews achieved (%)*	Refused (%)	No contact (%)	Ineligible (%)	Other (%)
Isle of Anglesey	43.03	35.59	3.86	17.52	0.00
Gwynedd	39.26	28.98	4.97	26.67	0.12
Conwy	48.26	32.05	6.12	13.21	0.36
Debigshire	44.98	39.39	5.72	9.78	0.13
Flintshire	52.18	34.93	5.68	6.55	0.66
Wrexham	43.07	38.70	9.81	8.00	0.43
Ceredigion	47.59	28.75	3.99	19.53	0.14
Pembrokeshire	45.28	31.05	4.67	18.90	0.10
Carmarthenshire	51.70	31.09	6.15	10.81	0.25
Swansea	45.78	34.94	6.88	12.22	0.17
Neath Porth Talbot	43.24	33.89	11.11	11.39	0.37
Bridgend	46.07	31.79	9.97	11.75	0.42
Vale of Glamorgan	50.76	34.67	6.74	7.39	0.43
Cardiff	45.62	32.89	9.50	11.57	0.43
Rhondda Cynon Taf	45.06	35.89	6.90	11.86	0.29
Caerphilly	52.13	36.88	4.68	6.22	0.09
Blaenau Gwent	46.25	41.02	2.61	10.11	0.00
Torfaen	53.56	35.87	5.53	5.04	0.00
Monmouthshire	59.29	28.16	3.88	8.55	0.11
Newport	54.76	34.62	4.35	6.17	0.10
Powys	49.10	30.26	4.86	15.01	0.77
Merthyr Tydfil	44.26	39.83	4.70	10.79	0.41
Total	47.74	33.82	6.27	11.87	0.31

* Response rates are based on the 2018-19 survey period, ending with end of March 2019. This means that reissues for February and March 2019 are not included in this table.

Sample and reissues

4.31 After each field period, a proportion of cases that had been coded as refusals, non-contacts or non-responses were reallocated to interview quotas and re-scattered. This was designed to reduce non-response bias and increase overall response. Reissues accounted for approximately 2.1% of the overall productive cases, or 1.0% of the issued sample. The response rate achieved at the reissue stage was approximately 11 percentage points lower than that of main stage (Table 4.6). Considering that identical field

methodology was used for main stage and reissued cases, this observation indicates that successful interviews are comparatively harder to achieve at the reissue stage. This suggests that the extra effort invested in reissues has increased the overall robustness of the dataset by increasing the proportion of addresses that would normally refuse or are otherwise difficult to reach in social surveys.

Table 4.6: Outcomes by mainstage vs. reissue period

Survey period	Eligible cases			Ineligible cases	Response rates
	Interviews achieved	Refusals	Non-response/ Non-contact/ Unknown eligibility/		
Mainstage	11,670	8151	1,566	2,907	54.6%
Reissue	252	295	78	57	40.3%
Total	11,922	8,446	1,644	2,964	54.2%

4.32 It should be noted that whilst cases identified for reissue during the fieldwork months of February and March were actioned in line with routine processes, any productive cases from these reissue periods are included in the 2018-19 survey data. Therefore, Table 4.6 includes reissued cases for February and March 2018 (from the sample of the previous survey year) but not the reissued cases for February and March 2019.

Achieved sample

4.33 In total 11,922 interviews were achieved, whereby 50 interviews were part of the 2017-18 sample that were reissued at the beginning of 2018-19. As these interviews were conducted with the 2018-19 questionnaire they are included in the respective dataset. The breakdown of interviews between each quarter of 2018-19 is given in Table 4.7.

Table 4.7: Achieved interviews by quarter.

Quarter	Interview dates	Interviews achieved	Cumulative interviews achieved
1	April '18 to June '18	2,917	2,917
2	July '18 to September '18	3,080	5,997
3	October '18 to December '18	2,913	8,910
4	January '19 to March '19	3,012	11,922
TOTAL		11,922	11,922

4.34 The response rate (Tables 4.6 and 4.8) was calculated as:

$$\text{Response rate} = \text{interviews achieved} / (\text{total addresses} - \text{ineligible cases})$$

The index provides the fraction of eligible addresses that produced a successful interview.

4.35 Ineligible addresses are those that would not be eligible to take part in the survey. This only includes addresses that were vacant, non-residential or not occupied as a main residence (e.g. holiday homes) and those coded by interviewers as inaccessible or that they were unable to locate. It does not include addresses that have been attempted a number of times by interviewers but where no contact has been made, unless there is clear evidence that the address is vacant or not occupied as a main residence (e.g. by confirming this with neighbours). The overall level of ineligible addresses was 11.8%.

4.36 The planned response rate for 2018-19 was 56%, based the previous year's achievement and the additional measure put in place to increase response.

4.37 The final response rate at national level for 2018-19 is 54.2%. Table 4.8 shows the response rates for 2018-19 at LA level.

Table 4.8: Achieved response rate by LA (ranked by response rate)

Local Authority	Total addresses*	Interview target	Completed interviews	Ineligible addresses	Response rate (%)
Monmouthshire	877	487	520	75	64.8
Ceredigion	727	368	346	142	59.1
Newport	988	477	541	61	58.4
Carmarthenshire	1,203	619	622	130	58.0
Powys	2,839	1,386	1,394	426	57.8
Torfaen	814	383	436	41	56.4
Flintshire	916	481	478	60	55.8
Pembrokeshire	963	439	436	182	55.8
Conwy	833	402	402	110	55.6
Caerphilly	1,174	570	612	73	55.6
Vale of Glamorgan	920	424	467	68	54.8
Gwynedd	866	408	340	231	53.5
Bridgend	953	456	439	112	52.2
Isle of Anglesey	725	364	312	127	52.2
Swansea	1,743	798	798	213	52.2
Cardiff	2,317	1,090	1,057	268	51.6
Blaenau Gwent	880	420	407	89	51.5
Rhondda Cynon Taf	1,711	777	771	203	51.1
Denbighshire	787	393	354	77	49.9
Merthyr Tydfil	723	336	319	78	49.5
Neath Port Talbot	1,080	483	467	123	48.8
Wrexham	938	439	404	75	46.8
TOTAL (National)	24,977	12,000	11,922	2,964	54.2

* The total sample, included reissued cases from February and March 2018, is used for the calculations.

- 4.38 Response rates ranged from 46.8% (Wrexham) to 64.8% (Monmouthshire). The number of interviews achieved was at or above target in nine local authorities, the other local authorities were below target. Due to end-of-year data processing tasks commencing immediately at the start of April, it was not possible to extend the field period to provide interviewers with the opportunity to follow-up on cancelled appointments. Instead, unproductive cases for February and March were reissued over the course of April and

May 2019. Any productive interviews resulting from the reissuing of these cases will be included in the 2019-20 dataset.

- 4.39 Large proportions of ineligible addresses were found in Gwynedd, Ceredigion, Pembrokeshire, and Isle of Anglesey. Lower degree of variation was recorded in other areas and the lowest ineligible rate was recorded in Torfaen.

Remedial action to low response

- 4.40 ONS closely monitored the progress of survey response performance over the course of the fieldwork period and applied very strict performance management measures to ensure targets were met. Performance at the start of the survey year was a little volatile from month to month across LAs, potentially influenced by short-term capacity issues (e.g. sick leave, annual leave, mentoring for new interviewers) being addressed inconsistently. However, performance became stronger and more consistent from the second quarter onwards. Achieved interviews increased from 10,493 in 2016-17 and 11,354 in 2017-18 to 11,923 in 2018-19, but response rates fell slightly from 54.5% to 54.2%.
- 4.41 Over the course of the survey year low-performing areas were investigated further, and two small scale research trials were conducted to explore possible measures that could be introduced to improve response (i.e. interviewer allocation and an unconditional non-monetary incentive). The intention was to test measures that could potentially lead to considerable improvements in low responding areas, which is why only small sample sizes were required to detect statistically significant differences. These trials were run as quasi experiments, whereby three quota areas across Wales were selected to build the control group, and a further three quota areas that were similar in previously achieved response rates, geography, population characteristics built the treatment group. Each quota area covered approximately 30 addresses and around 15 interviews per month. More detail on the implications on the overall sample can be found in section 2.

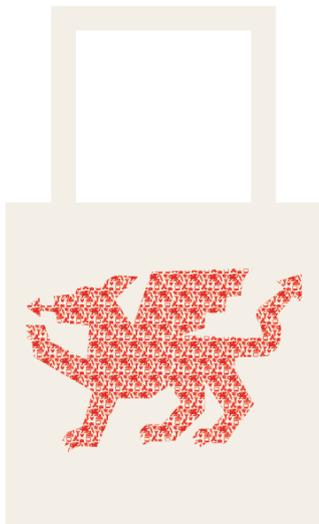
Research trial to assess interviewer affect

- 4.42 This research trial undertaken during the months July to August looked at the effect of assigning only particularly well-performing interviewers to the experimental area, which like the control area was identified as an area where quite low response rates were usually achieved. Whilst this could be down to certain characteristics of the area, the experiment tested whether an interviewer effect could be identified when the area effect is minimised by selecting quotas that are very similar to each other. The research trial was complemented by an interviewer focus group to explore some of the potential underlying reasons for an interviewer effect.
- 4.43 The research trial showed a statistically significant difference in the outcome achieved in the experimental area versus the control area, suggesting the difference in response rates between areas is not simply down to respondent characteristics but that how interviewers carry out field work is also an important factor. Results from the focus group discussion suggested that further thought should be given to the training and support provided to interviewers, as well as to their managers and how best practice is being shared amongst interviewers. These results have fed into a programme of work that is being taken forward by ONS over the course of 2018-19 and 2019-20.

Research trial to assess an unconditional non-monetary incentive

- 4.44 This second research trial was undertaken during the months September to November 2018 to assess the effect of including an unconditional non-monetary incentive with the advance letter and leaflet. A tote bag was specifically designed and produced for this trial to complement the WG-branded advance materials used in the National Survey (see Figure 4.1). As the advance letter and leaflet are usually sent folded in a DL size envelope, C4 size envelopes had to be used during the experiment months for the experiment group to fit the tote bag in together with the usual advance materials. It is thought that part of the effect of tote bags on response rates seen in previous experiments by ONS could be down to the larger packaging needed for the advance letter plus tote bag, which could have made receiving the advance materials more memorable.

Figure 4.1: Tote bag design for research trial



- 4.45 Interviewers working in the experimental areas were sent a small stock of tote bags as well, in case a household reported that they had not received the advance letter and tote bag; and also to carry it with them at the door step to see whether it triggered the resident's memory of receiving the tote bag a couple of weeks beforehand. The research trial was complemented by an interviewer focus group to explore whether and how the incentive made a difference from an interviewer's point of view at the door step.
- 4.46 The research trial found no statistically significant difference in the outcome achieved in the experiment area versus the control area, suggesting that the incentive had no effect on increasing response rates further in low-responding areas. This was in line with feedback from interviewers at the focus group, who thought that it did not seem to make a difference in people's likelihood to participate in the survey. A decision was therefore made not to roll out the incentive any further, but rather focus on exploring other types of incentives and measures to increase response over the course of the next survey year.
- 4.47 The results from these trials, in addition to focus groups with interviewers exploring the causes of low response in some areas, highlighted a number of areas for improvement. Some of these had already been addressed or were in the process of being addressed.

4.48 A programme of further research work for the following survey year 2019-20 has been agreed, exploring different measures that are expected to have a positive impact on response rates. This includes a large-scale split sample experiment testing an interactive infographic disc as part of the advance materials sent to sampled addresses. Potential further projects may involve the testing of a higher value incentive in low responding areas, and the testing of extra promotional activity to help raise the profile of the survey.

5. Data processing and output

- 5.1 This chapter covers the data processing and delivery aspects of the survey. This includes the data coding and editing processes, production of derived variables, the data checking process and details of the outputs provided to WG.

Conversion of interview cases into a dataset

- 5.2 When interviewers complete an interview, the case is transmitted remotely through a secure connection to the ONS Field Office. This case is then received by the Object Management System collating individual cases into a Blaise datafile. The Blaise datafiles (BDB) are then converted from a Blaise format to an SPSS dataset with an accompanying .sps meta file through an in-house ONS designed VB6 package called 'DataDeliveryExpress'.
- 5.3 New SPSS datasets are produced daily (when new cases are received by the Field Office) and delivered to the ONS National Survey Research Team.

Data coding and editing

- 5.4 Where relevant, logic checks and interviewer prompts were incorporated into the CAPI script (see section 3.16) in order to ensure that answers provided were consistent and sensible. In addition to these checks built into the CAPI questionnaire, a number of checks were run (usually several times a week) by the ONS National Survey Research Team on datasets received to highlight any potential inconsistencies. These included ensuring that interviewers had selected the correct person at the sampled address to interview, and that the correct questions were being asked based on routing.
- 5.5 Post-fieldwork editing was also conducted by the ONS National Survey Research Team on the data to account for any inconsistencies in response not covered by the checks built into the questionnaire. For example, the question asking respondents to select the ethnic group to which they belong contained several 'Other (specify)' codes, divided according to different ethnic groups (e.g. 'Any other Asian background'). If the verbatim response

provided at this question suggested that the respondent belonged a different 'Other' category, they were re-coded accordingly.

Data checks also included looking at any notes interviewers added to the questionnaire highlighting and/or clarifying any unusual responses.

Derived variables

- 5.6 A list of required derived variables was provided to ONS by WG. These are variables that are produced from other data, either collected during the interview or obtained from other sources (i.e. geography and census data). Those produced from data collected through the interview either reflect on an original questionnaire variable but where responses are grouped into fewer categories (e.g. age groups) or reflect on a number of questionnaire variables providing an indicator of a respondent having a certain characteristic (e.g. health related derived variables) or showing certain behaviours (e.g. sport and activity related derived variables). The full list of derived variables can be found in Annex I.

Data outputs

- 5.7 An unformatted dataset was provided to WG in April 2018. The file contained the raw data of the first 250 achieved interviews to allow WG to quality assure the questionnaire routing.
- 5.8 WG provided ONS with detailed specifications for required datasets. These specified the required format and labelling for each questionnaire variable and derived variable included in each dataset. Weighting variables were produced by ONS for the individual- and household-level files. Details on the weighting process and weight variables on the datasets can be found in chapter 6.
- 5.9 Based on the specification ONS provided to WG the following SPSS data files:
- An 'All people' file, based on responses to the enumeration grid and basic demographic information on the whole household.

- A respondent-level file based on responses to the questionnaire and containing interview data for all respondents.
- An anonymised sample file, with fieldwork outcomes (e.g. interviewed, refused) and geo-demographic data for all addresses.
- A non-anonymised file, with geographic data for all responding households.
- A re-contact file, with the address details of all respondents that agreed to be recalled.

5.10 Each dataset was provided to WG firstly as an interim data file after the first four months of the survey and then again after six and 12 months to allow an iterative approach to checking in preparation of final sign off. Each file for all iterations were first quality assured by the ONS National Survey Research Team followed by further checking on the content and format of the data sets being carried out by WG before they were signed off.

Availability of data

5.11 In order to enable the wider research community to access and use the survey data for further analysis, appropriately anonymised participant and household level dataset are hosted at the [UK Data Archive](#) and the [SAIL databank](#).

6. Weighting, non-response and analysis

- 6.1 The general approach used in the calculation and application of weighting to the 2018-19 data reflects standard protocols in use for weighting social surveys and is in line with current international best practice. Design weights that reflect the probability of selection (both for households and individuals) were calculated, before being calibrated to the estimated 2017 population of Wales from the 2014-based population projections¹⁵, and adjusted to represent the resident population¹⁶. However, the basic weighting strategy is consistent with the approaches taken to weighting the previous National Survey for 2016-17 and 2017-18, the 2015 large scale field test¹⁷ and the former Welsh Health Survey¹⁸.
- 6.2 Each weight is produced in two steps:
1. Production of design weight (to compensate for differences in sampling probability).
 2. Weight calibration (to compensate for differences between the sample profile and the known population profile).
- 6.3 As non-response at household and individual level may cause bias in the results, weights would usually be adjusted for the probability of not achieving an interview. The same approach as used for the 2016-17 and 2017-18 weights was applied to 2018-19 weights.

¹⁵ The weight calibration for 2018-19 was based on population [projections for 2017](#) as the population estimates for 2016 had not been published at the time the weights were produced.

¹⁶ “Resident population” means people living in private households across Wales. It excludes people living in institutional accommodation (e.g. care homes, halls of residence, prisons, hotels and B&Bs, and army bases). People in institutional accommodation are typically not included in social surveys.

¹⁷ The 2015 large scale field test can be found at [National Survey for Wales: development work](#)

¹⁸ The Welsh Health Survey test can be found at [Welsh Health Survey](#)

Design weights

6.4 The first step of the weighting process was to calculate a design weight for both the household and individuals within households, which reflects the probability of selection.

6.5 The household design weight adjusts for cases where multiple dwellings are found at a sampled address (e.g. a block of flats), or multiple households within a sampled dwelling.

6.6 The weight is calculated as follows:

$$\text{Household design weight} = \frac{N_h \times (\text{Number of households in dwelling}) \times (\text{Number of dwellings at address})}{n_h}$$

where n_h is the sample size (number of addresses) allocated within stratum h and N_h is the population size (number of addresses on the Postcode Address File) within stratum h

6.7 In most cases, the product of the number of dwellings at the address and the number of households at the dwelling will both be one. When necessary the numbers were capped to minimise variability in the design weights and therefore in the calibrated weights. The level of such a cap was informed by analysis of the data and evidence from other surveys.

6.8 The individual design weight adjusts for the random selection of one adult within sampled households containing more than one adult aged 16 or older. The weight is calculated as follows:

$$\text{Individual design weight} = \text{Adjusted household design weight}_i \times m_i$$

where m_i is the number of people aged 16 and over in household i .

6.9 To avoid disproportionate variation between addresses in the weights, the weight was capped at 5.

Calibration of weights

6.10 Finally, the adjusted design weights at both the household and individual levels are then calibrated to the relevant population totals. The population totals used in the calibration usually refer to the same period as the survey itself to give totals by LA for both individuals and households. The latest

population figures available for the 2018-19 weights were 2014-based population estimates for 2017 for Wales¹⁹ (adjusted for the resident population).²⁰ In deciding on appropriate calibration groups, these needed to be sufficiently large to limit variation in the weights. For the adult weights, the calibration initially considered age, sex and LA. Appropriate calibration groups were explored as data was received during the first few months of the survey and included in the calculation of the weights when relevant.

- 6.11 Appropriate estimates of the number of private households in Wales were used to calibrate the adjusted household design weight to these known population totals. Analysis was conducted to explore whether using information such as household composition, in terms of the number of adults and children within a household, would be beneficial in defining calibration groups and in the calibration.
- 6.12 Appropriate population totals were used to calibrate the adjusted individual design weight to represent the population of adults in Wales aged 16 and older. Variables considered for calibration groups included age, sex and local authority (LA). The most appropriate calibration groups were identified by ensuring that the calibration groups are of a suitable size (i.e. more than 30 responses in the sample).
- 6.13 As a result of the analysis, the following variables were used for the calibration of the various weights:

¹⁹ The population projections are based on the 2011 Census taking into account births and deaths up until 2014. These can be found at [StatsWales](#)

²⁰ Welsh Government, StatsWales Population Projections. Similarly these can be found at [StatsWales](#)

Table 6.1: Variables used for weight calibration

Household	Population	Adult	Child
Local authority (22)	Local authority (22)	Local authority (22)	Region (4)
Household Composition	AgeSex by Male and Female	AgeSex by Male and Female	North West Wales
1 person household (no child)	0-4 years	16-19 years	Mid Wales
2 person household with child	5-10 years	20-24 years	South West Wales
2 person household (no child)	11-15 years	25-29 years	South East Wales
3 person household with 2 children	16-19 years	30-34 years	Sex
3 person household with 1 child	20-24 years	35-39 years	Age (1-5)
3 person household (no children)	25-29 years	40-44 years	
4 person household with children	30-34 years	45-49 years	
4 person household (no children)	35-39 years	50-54 years	
5+ person household	40-44 years	55-59 years	
	45-49 years	60-64 years	
	50-54 years	65-69 years	
	55-59 years	70-74 years	
	60-64 years	75 years or older	
	65-69 years		
	70-74 years		
	75 years or older		

6.14 The weights available for 2018-19 are: a household weight, an adult weight, a population weight and a child weight. A separate adult weight is provided for each sub-sampled module to allow the accurate estimation of totals from the responses to the questions in each sub-sample. Such weights will account for the difference in the probability of selection between the main survey and for the sub-sample. Un-grossed versions of each of these weights are also available, which give a weighted achieved sample size equal to the un-weighted achieved sample size. Because un-grossed and calibrated

weights were initially found to produce slightly different estimates when producing the weights for 2016-17, all four quarters were scaled up at the same time to the overall sample size in line with last year's weights. The ungrossed weights were then checked to ensure they summed up to the correct sample totals. The same was done for 2018-19 weights. Annex J provides an overview of all weights included in the 2018-19 datasets:

6.15 The following tables provide projected 2017 population totals:

Table 6.2: Projected 2017 resident population by age and sex

Age by sex		N	%
Male	0-4	87,272	2.8
Male	5-10	112,948	3.7
Male	11-15	85,709	2.8
Male	16-19	69,840	2.3
Male	20-24	103,319	3.4
Male	25-29	102,227	3.3
Male	30-34	91,271	3.0
Male	35-39	87,145	2.8
Male	40-44	85,062	2.8
Male	45-49	102,141	3.3
Male	50-54	107,708	3.5
Male	55-59	100,684	3.3
Male	60-64	90,581	2.9
Male	65-69	91,604	3.0
Male	70-74	80,113	2.6
Male	75-79	59,293	1.9
Male	80+	58,066	1.9
Female	0-4	83,130	2.7
Female	5-10	107,290	3.5
Female	11-15	81,502	2.7
Female	16-19	64,908	2.1
Female	20-24	95,143	3.1
Female	25-29	99,453	3.2
Female	30-34	92,646	3.0
Female	35-39	89,905	2.9

Age by sex		N	%
Female	40-44	88,029	2.9
Female	45-49	107,499	3.5
Female	50-54	113,374	3.7
Female	55-59	105,766	3.4
Female	60-64	95,411	3.1
Female	65-69	95,908	3.1
Female	70-74	85,962	2.8
Female	75-79	65,100	2.1
Female	80+	85,351	2.8
Other/Don't know		1,607	0.1
All		3,072,967	100.0

Table 6.3: Projected 2017 resident population by age with Local authority

Local authority	0-24	25-64	65-74	75+
Isle of Anglesey	14,233	33,839	12,047	8,819
Gwynedd	37,573	56,063	14,739	11,460
Conwy	25,318	54,083	19,477	15,172
Denbighshire	25,897	45,540	12,588	9,908
Flintshire	39,386	82,945	16,229	15,686
Wrexham	35,238	68,269	16,422	13,991
Powys	28,961	64,883	20,550	16,093
Ceredigion	18,484	31,719	10,939	8,340
Pembrokeshire	29,887	61,608	17,539	13,617
Carmarthenshire	53,811	89,949	24,211	15,924
Swansea	73,689	117,530	29,501	20,040
Neath Port Talbot	36,808	71,796	17,441	14,885
Bridgend	41,614	69,339	17,016	13,886
Vale of Glamorgan	34,779	68,390	14,218	11,177
Cardiff	124,172	180,150	28,295	18,752
Rhondda Cynon Taf	74,342	124,427	21,445	16,382
Merthyr Tydfil	17,145	32,855	5,940	3,525
Caerphilly	58,019	93,101	16,495	12,065
Blaenau Gwent	18,674	36,398	8,321	5,623
Torfaen	28,549	47,342	8,502	7,105
Monmouthshire	24,833	47,592	10,864	8,594
Newport	50,326	81,811	11,008	6,762
All	891,738	1,559,629	353,787	267,806

Table 6.4: Projected 2017 household composition estimates

Group description	Group size
Pensioner couple - a couple where one or more of the adults are of State Pension age or over	203,986
Single pensioner - single adult of State Pension age or over	223,256
Couple with children - a non-pensioner couple with dependent children	205,389
Couple without children - a non-pensioner couple with no dependent children	171,025
Single adult with children - a non-pensioner single adult with dependent children	92,897
Single adult without children - a non-pensioner single adult with no dependent children	202,359
3 or more adults with children – three or more adults with dependent children	56,390
3 or more adults without children - related – three or more adults with no dependent children, who are related to each other	90,160
3 or more adults without children - not related – three or more adults with no dependent children, who are not related	42,608
Other households	61,842
Total	1,349,911

Design effects and factors

- 6.16 Design effects and factors have been calculated for several variables allowing effective sample sizes to be produced at a national and local level. Table 6.5 provides an overview of the average design effect at local authority level based on a number of selected questions that were asked of the whole sample of respondents.

Table 6.5: Design effects and effective sample sizes²¹

Local authority	Design effect	Effective sample size
Isle of Anglesey	1.28	244
Gwynedd	1.09	312
Conwy	1.30	308
Denbighshire	1.18	298
Flintshire	1.19	400
Wrexham	1.14	354
Powys	1.20	1157
Ceredigion	1.26	274
Pembrokeshire	1.26	347
Carmarthenshire	1.33	467
Swansea	1.20	660
Neath Port Talbot	1.29	359
Bridgend	1.17	371
Vale of Glamorgan	1.17	395
Cardiff	1.06	999
Rhondda Cynon Taf	1.21	636
Merthyr Tydfil	1.26	252
Caerphilly	1.33	458
Blaenau Gwent	1.31	310
Torfaen	1.46	295
Monmouthshire	1.39	371
Newport	1.24	432
Average	1.24	441
Full sample	1.41	9,699

- 6.17 Further breakdowns of a selection of variables by local authority, local health board, gender, age group, economic status, and household material deprivation are included in Annex L.
- 6.18 Table 6.6 shows the design effects, design factors and confidence intervals for a range of questions in the 2018-19 survey.

²¹ The variables used to calculate average design effects were all asked of the full sample. These were IntPersUse, EdOverSat, WbLifeWrth, WelSpk, Dvsmokec, Dvalcushibi, Dvmvpa150, and DvFGHealth1.

Table 6.6: Design effects, design factors and confidence intervals for a range of 2018-19 survey estimates²²

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
DvEcoStat3	Economic status (3 classifications)	In employment	0.99	0.99	52.1%	53.8%
		Unemployed	1.94	1.39	2.2%	2.9%
		Economically inactive	0.93	0.96	43.5%	45.3%
		Don't know/refused	1.04	1.02	0.0%	0.2%
		Total	0.94	0.97		
FinBilCredNP	Household Deprivation - Ability to keep up with bills and credit commitments at present (Household)	Keeping up with all bills and commitments without any difficulties	1.39	1.18	60.5%	63.0%
		Keeping up with all bills and commitments but it is a struggle from time to time	1.42	1.19	25.3%	27.6%
		Keeping up with all bills and commitments but it is a constant struggle	1.28	1.13	6.3%	7.6%
		Falling behind with some bills and credit commitments	0.97	0.99	1.4%	1.9%
		Having real financial problems and have fallen behind with many bills and credit commitments	0.99	0.99	0.8%	1.2%
		Have no bills	1.70	1.30	0.2%	0.6%
		Don't know/refused	2.49	1.58	1.4%	2.3%
		Total	1.26	1.12		
FinBilCredP	Household Deprivation - Ability to keep up with bills and credit commitments at	Keeping up with all bills and commitments without any difficulties	1.22	1.10	82.2%	84.7%
		Keeping up with all bills and commitments but it is a struggle from time to time	1.22	1.10	11.2%	13.4%

²² The variables used to calculate average design effects were all asked of the full sample. These IntPersUse, WelSpk, Dvsmokec, Dvalcushibi, Dvmvpa150, DvFGHealth1

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
	present (Pensioner)	Keeping up with all bills and commitments but it is a constant struggle	1.10	1.05	2.0%	3.0%
		Falling behind with some bills and credit commitments	1.18	1.09	0.1%	0.3%
		Having real financial problems and have fallen behind with many bills and credit commitments	0.80	0.90	0.1%	0.4%
		Have no bills	1.00	1.00	0.5%	1.0%
		Don't know/refused	1.99	1.41	0.3%	1.0%
		Total	1.07	1.04		
DvFinBilCred	Household/Pensioner deprivation - Ability to keep up with bills and credit commitments at present	Keeping up with all bills and commitments without any difficulties	1.46	1.21	66.1%	68.1%
		Keeping up with all bills and commitments but it is a struggle from time to time	1.54	1.24	22.0%	23.9%
		Keeping up with all bills and commitments but it is a constant struggle	1.46	1.21	5.3%	6.3%
		Falling behind with some bills and credit commitments	1.19	1.09	1.1%	1.5%
		Having real financial problems and have fallen behind with many bills and credit commitments	1.16	1.08	0.6%	1.0%
		Have no bills	1.40	1.18	0.3%	0.7%
		Don't know/refused	2.83	1.68	1.2%	1.9%
		Total	1.34	1.16		
GenHealth	Health in general	Very good	1.48	1.22	36.0%	38.1%
		Good	1.47	1.21	33.8%	35.9%
		Fair	1.18	1.08	18.4%	19.9%

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
		Bad	1.05	1.03	5.9%	6.8%
		Very bad	1.15	1.07	2.2%	2.8%
		Don't know/refused	0.73	0.85	0.0%	0.1%
		Total	1.22	1.10		
IntPersUse	Internet - Personal use of internet at home, work or elsewhere	Yes	0.68	0.82	86.6%	87.7%
		No	0.68	0.82	12.3%	13.4%
		Don't know/refused	0.91	0.95	0.0%	0.0%
		Total	0.68	0.83		
EdOverSat	Education - Overall satisfaction with the state of education in Wales (0 -10 scale)	Mean	1.36	1.16	6.64	6.77
WbLifeWrth	Well-being - Extent of feeling that things done in life are worthwhile (0-10 scale)	Mean	1.39	1.18	8.01	8.08
WelSpk	Welsh Language - Speak Welsh	Yes	1.30	1.14	17.4%	18.9%
		No	1.32	1.15	66.3%	68.2%
		No, but have some Welsh speaking ability	1.56	1.25	13.8%	15.4%
		Don't know/refused	1.95	1.40	0.0%	0.1%
		Total	1.49	1.22		
GpOverSat	GP - Overall satisfaction with care received	Very satisfied	1.50	1.23	69.9%	73.3%
		Fairly satisfied	1.51	1.23	19.2%	22.2%
		Neither satisfied nor dissatisfied	1.39	1.18	2.3%	3.5%
		Fairly dissatisfied	1.58	1.26	2.4%	3.6%
		Very dissatisfied	1.65	1.28	1.2%	2.1%

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
		Don't know/refused	1.95	1.40	0.0%	0.3%
		Total	1.54	1.24		
TxMstCtrl	Tax - Who currently has the most control over the taxes you pay	Local councils	1.51	1.23	4.8%	7.3%
		Welsh Government	1.26	1.12	8.4%	11.4%
		UK Government	1.53	1.24	63.4%	68.4%
		Other	1.41	1.19	0.0%	0.5%
		Don't know/refused	2.76	1.66	0.1%	0.2%
		Total	1.70	1.30		
Dvsmokec	Smoking- Currently smoke either daily or occasionally	Yes	1.49	1.22	16.0%	18.3%
		No	1.49	1.22	81.6%	83.9%
		Don't know/refused	0.99	0.99	0.0%	0.2%
		Total	1.49	1.22		
Dvecignbi	Smoking - E-cigarette used now - binary	Yes	1.58	1.26	5.8%	7.4%
		No	1.58	1.26	92.5%	94.1%
		Don't know/refused	0.93	0.97	0.0%	0.1%
		Total	1.58	1.26		
Dvalcushibi	Alcohol - usual weekly alcohol consumption: higher risk - binary	Yes	1.45	1.20	17.2%	19.6%
		No	1.42	1.19	78.7%	81.1%
		Don't know/refused	1.22	1.10	1.4%	2.1%
		Total	1.44	1.20		
Dvfv52	Fruit & Vegetables - Eaten 5+ fruit or veg the previous day	Yes	1.45	1.21	22.3%	25.0%
		No	1.45	1.20	74.8%	77.5%
		Don't know/refused	0.91	0.95	0.1%	0.3%
		Total	1.45	1.21		
Dvbmowob2	Body Mass Index -	Yes	1.41	1.19	53.1%	56.1%

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
	BMI Overweight or obese (excl pregnant women)	No	1.47	1.21	35.6%	38.6%
		Don't know/refused	1.42	1.19	7.5%	9.2%
		Total	1.45	1.21		
DvBmiObese2	Body Mass Index - BMI Obese (excl pregnant women)	Yes	1.36	1.17	20.7%	23.2%
		No	1.40	1.18	68.4%	71.2%
		Don't know/refused	1.42	1.19	7.5%	9.2%
		Total	1.37	1.17		
Dvmvpa150	Physical activity - MVPA meets guidelines 150 minutes weekly	Yes	1.41	1.19	50.2%	53.2%
		No	1.41	1.19	46.7%	49.7%
		Don't know/refused	0.80	0.90	0.0%	0.2%
		Total	1.41	1.19		
Dvmvinact	Physical activity - MVPA inactive <30 minutes weekly	Yes	1.29	1.14	32.8%	35.6%
		No	1.29	1.14	64.3%	67.1%
		Don't know/refused	0.80	0.90	0.0%	0.2%
		Total	1.29	1.14		
DvFGHealth1	Health - People with fewer than 2 healthy lifestyle behaviours (not smoking, healthy weight, eat 5 fruit or veg, not drinking above guidelines, active).	Yes	1.40	1.18	8.4%	10.1%
		No	1.42	1.19	79.5%	81.9%
		Don't know/refused	1.39	1.18	9.2%	11.0%
		Total	1.41	1.19		
OAct4w	Sport - Current participation - Outdoor games and activities taken part in within the last 4 weeks	Football (outdoor)	2.14	1.46	7.5%	8.8%
		Jogging	2.05	1.43	9.6%	11.1%

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
OPur4w	Sport - Current participation - Outdoor pursuits taken part in within the last 4 weeks	Walking (over 2 miles)	1.43	1.19	33.6%	35.6%
DvFGSport	Derived variable - Participation in sporting activities three or more times a week (FG indicator)	Yes	1.49	1.22	31.1%	33.1%
		No	1.48	1.22	66.2%	68.3%
		Don't know/refused	1.34	1.16	0.5%	0.8%
		Total	1.49	1.22		
IAct4W34	Sport – Current participation – Indoor games and activities taken part in within the last 4 weeks	Swimming (indoor)	1.50	1.23	10.4%	11.8%
DvLDAAny	Derived variable – Latent demand for any activity	Yes	1.25	1.12	48.4%	50.4%
		No	1.25	1.12	48.8%	50.8%
		Don't know/refused	1.32	1.15	0.7%	1.0%
		Total	1.25	1.12		
LocServAv	Local authorities – Satisfaction with availability of services and facilities	Very satisfied	1.42	1.19	26.1%	28.0%
		Fairly satisfied	1.46	1.21	41.1%	43.2%
		Neither satisfied nor dissatisfied	1.40	1.18	9.5%	10.8%
		Fairly dissatisfied	1.48	1.21	10.8%	12.2%
		Very dissatisfied	1.37	1.17	5.7%	6.7%
		No local services and facilities	1.27	1.13	2.3%	3.0%
		Don't know/refused	0.96	0.98	0.2%	0.4%
IncResp	Income – Total personal income	Less than £10,400 a year	1.41	1.19	25.2%	27.3%
		£10,400 to £20,799 a year	1.37	1.17	31.6%	33.8%

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
	from all sources over the last 12 months (GROSS)	£20,800 to £31,099 a year	1.39	1.18	17.1%	18.9%
		£31,100 to £41,499 a year	1.32	1.15	10.8%	12.3%
		£41,500 or more a year	1.39	1.18	5.1%	6.2%
		Don't know/refused	1.66	1.29	5.2%	6.4%
		Total	1.28	1.13		
AtFrqWlk	Active travel – How frequently walked for more than 5 minutes as a means of transport, in last 3 months?	Every day	1.52	1.23	22.9%	24.8%
		Several times a week	1.58	1.26	17.3%	19.0%
		Once or twice a week	1.41	1.19	13.9%	15.4%
		Once or twice a month	1.46	1.21	7.5%	8.7%
		Less often / never	1.27	1.13	32.9%	34.9%
		Don't know/refused	1.40	1.18	1.1%	1.6%
		Total	1.33	1.15	3.0%	3.2%
Tenure	Accommodation - Tenure	I/we own it or live with the person who owns it	1.48	1.22	70.5%	72.4%
		It is rented from the local council	1.32	1.15	4.7%	5.6%
		It is rented from a housing association or housing trust	1.34	1.16	7.9%	9.1%
		It is rented from a private landlord	1.77	1.33	12.8%	14.3%
		Other (e.g. live rent free or home comes with job)	1.63	1.28	0.9%	1.4%
		Don't know/refused	3.16	1.78	0.1%	0.3%
		Total	1.59	1.26		
PsSchSat	Primary education – Satisfaction with school	Very satisfied	1.24	1.11	60.8%	66.3%
		Fairly satisfied	1.23	1.11	24.0%	29.0%
		Neither satisfied nor dissatisfied	1.47	1.21	3.0%	5.4%
		Fairly dissatisfied	1.07	1.04	2.5%	4.6%
		Very dissatisfied	1.13	1.07	1.2%	2.8%

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
		Don't know/refused	3.54	1.88	0.0%	0.7%
		Total	1.18	1.08		
FPFoodBE	Food Poverty – Has household received food from a food bank in the last 12 months? (CASI)	Yes	1.50	1.22	2.3%	3.1%
		No	1.63	1.28	96.3%	97.2%
		Don't know/refused	2.32	1.52	0.3%	0.7%
		Total	1.50	1.23		
BioChange	Biodiversity – Change in the variety of species in Wales	Yes, there has been an increase	1.41	1.19	14.2%	16.4%
		Yes, there has been a decrease	1.32	1.15	24.2%	26.8%
		There has been no change	1.49	1.22	31.7%	34.6%
		Don't know/refused	1.52	1.23	24.7%	27.4%
		Total	1.49	1.22		
LEnvSatPol	Pollution and Litter – view on level of air pollution in local area	Very satisfied	1.37	1.17	36.3%	39.1%
		Fairly satisfied	1.49	1.22	31.5%	34.4%
		Neither satisfied nor dissatisfied	1.57	1.25	14.0%	16.2%
		Fairly dissatisfied	1.43	1.20	7.0%	8.6%
		Very dissatisfied	1.25	1.12	3.3%	4.4%
		Don't know/refused	1.93	1.39	2.1%	3.2%
		Total	1.34	1.16		
WelSpkLrn	Welsh language – Where mainly learned to speak Welsh	At home, as a young child	1.22	1.11	31.1%	34.5%
		At nursery (aged 3-4)	1.74	1.32	2.3%	3.6%
		At primary school (aged 5-10)	1.65	1.28	18.4%	21.7%
		At secondary school (aged 11+)	1.67	1.29	21.3%	24.8%
		At college or university	1.13	1.06	3.3%	4.7%
		Somewhere else	1.04	1.02	15.5%	18.1%
		Don't know/refused	1.49	1.22	0.1%	0.5%

Variable name	Variable label	Value label	Design effect	Design factor	95 % Confidence Interval	
					Lower	Upper
		Total	1.11	1.05		
OutChAct	Child outdoor recreation – Child's most recent activity in green space	Playing outdoors	1.23	1.11	72.9%	77.0%
		Going for a walk (child walking)	1.19	1.09	7.0%	9.6%
		Going for a walk (child in a pram/ pushchair or being carried)	1.56	1.25	2.1%	3.8%
		Running	1.40	1.18	1.3%	2.7%
		Riding a bike (off road)	1.12	1.06	2.9%	4.6%
		Riding a bike (on road)	1.33	1.15	0.7%	1.7%
		Horse riding	1.00	1.00	0.2%	0.8%
		Fishing	1.28	1.13	0.0%	0.4%
		Rock climbing or caving	1.00	1.00	0.0%	0.4%
		Swimming outdoors	1.17	1.08	0.3%	1.1%
		Watersports	0.88	0.94	0.0%	0.4%
		Wildlife watching	1.16	1.08	0.0%	0.5%
		Having a picnic or barbecue	1.19	1.09	0.4%	1.3%
		Other	1.18	1.09	2.3%	3.9%
		Don't know/refused	1.26	1.12	0.5%	1.3%
		Total	1.18	1.09		

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Annex A – Kish Grid

		Number of adults aged 16 or over in household												
		2	3	4	5	6	7	8	9	10	11	12	13	14
Address Number on Address List	1	1	1	2	1	2	5	7	3	2	6	9	7	1
	2	2	3	1	2	4	3	6	8	4	4	1	9	13
	3	2	2	3	5	3	7	5	1	10	7	12	4	9
	4	1	2	4	4	5	2	8	6	3	11	8	5	3
	5	2	1	2	3	1	4	1	2	1	3	6	12	8
	6	1	3	1	1	6	1	3	7	9	5	2	11	4
	7	1	2	3	3	4	6	4	9	6	2	5	8	6
	8	2	1	4	4	1	7	2	4	8	8	11	2	12
	9	1	3	4	5	3	1	4	5	5	10	7	6	11
	10	2	3	1	2	5	6	7	8	7	9	10	13	2
	11	2	2	3	4	2	3	5	4	6	1	4	10	14
	12	1	1	2	2	6	5	2	1	5	5	3	1	5
	13	2	1	4	1	4	4	1	7	2	8	11	3	7
	14	1	2	2	3	1	2	3	2	10	4	10	5	10
	15	2	3	3	5	5	2	8	3	7	6	5	10	14
	16	1	2	1	3	3	1	6	5	3	10	1	1	5
	17	1	1	3	5	6	4	8	9	4	7	9	9	6
	18	2	3	4	4	2	7	2	6	9	3	4	2	13
	19	2	3	1	1	2	3	7	8	8	1	2	3	4
	20	1	2	2	2	5	5	3	2	1	2	8	12	10
	21	2	1	2	4	3	6	1	1	10	11	7	8	7
	22	1	2	4	5	4	2	5	6	8	9	6	4	8
	23	2	3	3	2	1	7	4	7	9	4	12	13	9
	24	1	1	1	3	6	3	6	5	6	2	3	11	3
	25	2	3	1	1	4	4	8	3	1	9	5	6	1
	26	1	1	3	1	5	6	2	9	5	10	12	7	2
	27	1	2	4	2	1	5	5	4	3	5	6	4	11
	28	2	3	2	5	2	1	3	8	7	8	7	5	12
	29	2	1	1	3	6	5	7	9	4	6	10	1	12
	30	1	2	4	4	3	1	4	4	2	7	9	11	11
	31	1	1	3	1	2	3	6	3	2	11	1	7	1
	32	2	3	2	2	4	7	1	1	4	1	8	9	13
	33	2	2	1	5	3	2	7	6	10	3	2	12	9
	34	1	2	3	4	5	4	6	2	3	4	11	8	3
	35	2	1	4	3	1	6	5	7	1	7	4	2	8
	36	1	3	2	1	6	7	8	5	9	11	3	6	4
	37	1	2	1	3	4	1	1	8	6	3	9	13	6
	38	2	1	3	4	1	6	3	4	8	5	1	10	2
	39	1	3	4	5	3	3	4	1	5	2	12	3	5
	40	2	3	2	2	5	5	2	7	7	8	8	5	7

Annex B – Sub-sampling specification

Topic	Subsample	Notes
Play	2,000	Asked of all parents/guardians plus 2k national subsample of non-parents
GP services	5,500	Split equally by health board, same subsample as other personal health topics, within hospital subsample
Hospitals	10,000	Split equally by health board
BMI, Diet, Alcohol, Smoking, and Physical activity(FG)	6,000	Split equally by health board, same subsample for each topic, within hospital subsample
Satisfaction with health services	6,000	Split equally by health board, same subsample as personal health topics (BMI etc.), within hospital subsample
Satisfaction with education system	2,000	Asked of all parents plus 2k of non-parents
Satisfaction with Welsh Government	4,000	
Tax devolution	2,000	
Natural Resources Wales modules (except 'Children's use of outdoor environment)	6,000	Asked of the other half of respondents that are not routed to health-related sub-sample modules.
Bags used for shopping	4,000	
Recycling	4,000	Sub-sample only applies to RecycSold, RecycBgt, RecycHHClo, and RecycHHFm
Arts in Wales topics – arts attendance and participation	4,000	

Annex C – Survey timings

Table C.1: 2018-19 National Survey mean and median times by questionnaire section. Mean median figures are based on cases routed to the relevant section (Sample size) not including respondents that were not sampled for sub-sampled modules. All times are given in seconds. Mean and median figures have been rounded to the nearest tenth.

Section name	Sample size	Mean	Median
Household composition / marital status / household relationships	11,888	150.1	76.0
Core - National identity	11,884	36.8	26.0
Core - Ethnicity	11,745	4.5	2.0
Core - Economic status and qualifications	11,641	48.8	43.0
Core - Tenure	11,804	7.8	6.0
Household composition	11,869	61.4	43.0
Names of household members	11,853	32.4	18.0
Core - Tenure	11,804	7.8	6.0
Core - Welsh language	11,670	19.3	12.0
Welsh language in the workplace	5,386	17.9	9.0
Welsh language transmissions	5,172	19.9	15.0
Core - Well-being (ONS4)	11,581	68.5	59.0
Internet use	11,515	58.6	55.0
Community cohesion	11,562	70.7	61.0
Community safety	11,464	39.1	33.0
Local authority services	11,487	59.3	51.0
Access to services and facilities	11,669	101.4	88.0
Democracy and understanding of local councils	11,863	47.6	38.0
Post-compulsory education and training	11,435	39.0	24.0
Primary schools	1,620	125.6	111.0
Secondary schools and education aspirations	1,281	112.5	106.0
Childcare	2,250	63.6	46.0
Play*	4,251	41.7	31.0
Screen time for child	1,022	102.2	100.0
Core - General health	11,728	15.8	11.0
Core - Health demographic questions	11,870	69.7	44.0
GP services*	5,234	65.2	52.0
GP - out of hours services	11,579	23.6	17.0
Hospitals*	9,778	23.6	17.0
Social care services	11,389	59.1	46.0
Eye care	11,707	35.2	27.0
Hearing impairment	11,875	26.9	16.0
Diet*	5,770	81.9	74.0
Alcohol*	5,786	126.1	114.0
Smoking*	5,693	48.8	39.0
Physical activity*	5,699	100.1	94.0
Active travel	11,604	33.1	29.0
Satisfaction with health services*	5,707	38.2	31.0
Satisfaction with education system*	4,814	34.6	23.0
Satisfaction with Welsh Government*	4,057	30.5	26.0
Tax devolution*	2,092	196.8	188.0
Core - Household material deprivation	7,609	91.0	79.0

Section name	Sample size	Mean	Median
Core - Household pensioner material deprivation	4,051	109.7	86.0
Core - Child material deprivation	2,545	48.5	44.0
Food poverty	1,014	20.8	19.0
Welfare reform	11,550	32.7	25.0
NRW - Introduction*	5,926	12.2	5.0
NRW - Visits in the last 12 months*	5,762	49.0	47.0
NRW - Visits in the last 4 weeks*	4,559	33.6	30.0
NRW - Most recent visit*	4,023	104.2	101.0
NRW - General question*	1,852	22.4	13.0
NRW - Access to a garden*	5,865	8.5	6.0
NRW - Children's use of the outdoor environment	2,496	72.0	68.0
NRW - Value of local environmental quality*	5,784	157.2	143.0
NRW - Biodiversity*	5,765	54.8	51.0
NRW - Climate change*	5,722	51.9	39.0
NRW - Environmental action*	5,770	43.1	38.0
NRW - Flood risk*	5,742	61.3	56.0
Bags used for shopping*	4,785	156.9	147.0
Recycling*	11,868	74.7	43.0
AIWS - Attendance*	4,169	116.5	109.0
AIWS - Participation*	4,102	72.2	61.0
AIWS - Welsh language arts events*	3,078	10.0	8.0
AIWS - Barriers*	4,156	22.0	20.0
AIWS - Attitudes to arts and culture*	4,129	155.7	150.0
Sports Wales - current participation and latent demand	11,616	126.3	102.0
CASI - Training module	11,855	95.2	77.0
CASI - Warwick-Edinburgh Mental Well-being scale	10,730	142.3	120.0
CASI - Social care wellbeing questions	10,449	36.4	32.0
CASI - Food poverty	9,496	28.2	25.0
CASI - Banded income	10,459	44.1	38.0
CASI - Pregnant	1,209	6.9	6.0
CASI - Sexual orientation and religion	10,452	28.8	25.0
Core - Recontact	11,855	39.2	28.0
Core - Interviewer check information	11,842	114.9	94.0
Overall	11,483	2,976.0	2,796.0

*Subsampled sections

Annex D – WG advance letter

Help improve local services
and receive a £10 thank you



Helpu gwella gwasanaethau
lleol a chael £10 fel diolch



Dear resident,
Your address has been selected for the **National Survey for Wales**. We would like someone in your household to take part in a simple interview. This is your chance to tell the Welsh Government about your experiences and views on things like health and the NHS, schools, sports and council services.

You can help us improve local services
Taking part will help improve services in your local area and across Wales. We will keep your answers confidential and only use them for research purposes. With your help, we can gain a better understanding of the issues that affect life in Wales.

We need to interview somebody in your household
An interviewer will call round to arrange a convenient time for an interview. They will select one person in your household, aged 16 or over, to take part. Please show this letter to any other people in your household in case your interviewer visits when you are not at home.

The study is being carried out for the Welsh Government by the Office for National Statistics (ONS). If you would like to arrange an appointment, request a Welsh speaking interviewer, or have any questions please call 0800 021 2121. A Welsh speaking interviewer is available Monday to Friday, 9am to 5pm. If you are unable to reach us, please email nsf@wales.gov.uk. Thank you for helping us with this important study.

Dr Steven Marshall
Chief Social Research Officer
Welsh Government

Annwyl breswlydd,
Mae eich cyfeiriad wedi'i ddewis ar gyfer **Arolwg Cenedlaethol Cymru**. Hoffem i rywun yn eich cartref i gymryd rhan mewn cyfweiliad syml. Dyma eich cyfle i ddweud wrth Lywodraeth Cymru am eich profiadau a'ch barn ar bethau fel iechyd a'r GIG, ysgolion, chwaraeon, a gwasanaethau'r cyngor.

Gallwch helpu ni i wella gwasanaethau lleol
Bydd gymryd rhan yn helpu i wella'r gwasanaethau yn eich ardal lleol a Chymru gyfan. Byddwn yn cadw eich atebion yn gyfrinachol ac yn eu defnyddio at ddibenion ymchwil yn unig. Gyda'ch help, gallwn gael gwell dealltwriaeth o'r materion sy'n effeithio ar fywyd yng Nghymru.

Mae angen i ni gyfweild â rhywun yn eich cartref
Bydd cyfweilydd yn ymweld â'ch cyfeiriad er mwyn trefnu amser cyfleus i gynnal cyfweiliad. Bydd y cyfweilydd yn dewis un person, 16 oed neu drosodd, yn eich cartref i gymryd rhan. Dangoswch y llythyr hwn i unrhyw un arall sy'n byw yn eich cartref rhag ofn na fyddwch gartref pan fydd y cyfweilydd yn galw.

The study is being carried out for the Welsh Government by the Office for National Statistics (ONS). If you would like to arrange an appointment, request a Welsh speaking interviewer, or have any questions please call 0800 021 2121. A Welsh speaking interviewer is available Monday to Friday, 9am to 5pm. If you are unable to reach us, please email nsf@wales.gov.uk. Thank you for helping us with this important study.

Dr Steven Marshall
Prif Swyddog Ymchwil Gymdeithasol
Lywodraeth Cymru

www.gov.wales/nationalsurveyinfo

The information you give us is protected by law and is treated as confidential. It will be used for statistical purposes only.

Happy to communicate in Welsh or English
Welsh Government, Cathays Park, Cardiff, CF10 3NQ

www.llyw.cymru/arolwgcenedlaetholgwylb

Mae'r wybodaeth rydych chi'n ei rhoi i ni yn cael ei diogelu gan y gyfraith ac yn cael ei thrin yn gyfrinachol. Caiff ei defnyddio at ddibenion ystadegol yn unig.

Hapus i gyfathrebu yn y Gymraeg neu yn Saesneg
Lywodraeth Cymru, Parc Cathays, Caerdydd, CF10 3NQ

A high-resolution image of the 2018-19 National Survey advance letter is held on the [National Survey pages](#) at the UK Data Archive (document available from autumn 2019).

Annex F – ONS A5 postcard



NATIONAL SURVEY FOR WALES Arolwg Cenedlaethol Cymru



INTERNAL NSW 04/18

Dear resident,

We recently wrote to you about the **National Survey for Wales**.

This study is being carried out for the Welsh Government by the Office for National Statistics (ONS). I work for ONS and will call round in the next week. I will have an ONS identity card

You will receive a gift voucher to say thank you for taking part.

I look forward to meeting you soon.

Annwyl breswilydd,

Ysgrifennom atoch yn ddiweddar am yr **Arolwg Cenedlaethol Cymru**.

Mae'r astudiaeth hon yn cael ei chynnal gan y Swyddfa Ystadegau Gwladol (SYG) ar ran Llywodraeth Cymru. Rwy'n gweithio i'r SYG a byddaf yn galw gyda chi yn ystod yr wythnos safon nesaf i gael cerdyn adnabod SYG.

Byddwch chi'n derbyn cerdyn gwerth £10 i ddiolch i chi am gymryd rhan.

Lorychnaf ymlaen i gyfarfod a chi cyn hir.

My name / Fy enw: _____

Interviewer number / Rhif cyfwelydd: _____

Telephone number / Rhif ffôn: _____



A high-resolution image of the 2018-19 A5 Postcard is held on the [National Survey pages](#) at the UK Data Archive (document available from autumn 2019).

Annex G – Data linkage showcard and flowchart

Figure G.1: Data linkage showcard

National Survey for Wales



Making your survey answers even more valuable

What do we want to do?

The Welsh Government would like to be able to **link your anonymised survey answers** to other anonymised information about you which is available to the Welsh Government, the NHS or other public organisations. For example: your GP, hospital and education records.

Why do we want to link your survey answers?

Linking your survey answers will give approved researchers, the Welsh Government, and other public organisations a wealth of extra information, so that they can have a clearer picture of issues in Wales and how to tackle them.

What will happen to my information?

The Welsh Government, NHS, and other public organisations will link your survey answers to other anonymised information about you which is available to them. This will be done using a secure research environment. The Office for National Statistics will also use the data to produce statistics. Your name, address and postcode will remain separate from your survey answers at all times and will not be included in the linked data.

Who will be able to use the linked data?

The data will be made available using a Secure Research Environment to approved researchers from the Welsh Government, universities or other accredited organisations for projects that have been approved by the Welsh Government. Only projects with a clear public benefit will be approved.

Before researchers are allowed to access data using a secure research environment, they must complete a training course to make sure they understand how to handle linked anonymised data safely, lawfully and responsibly.

Where can I get more information about this?

For more information please visit the National Survey for Wales website:

www.gov.wales/nationalsurveydatalink

Details on how we store and process information can be found at:

www.gov.wales/nationalsurveyinfo

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Arolwg Cenedlaethol Cymru



Gwneud eich atebion arolwg hyd yn oed yn fwy gwerthfawr

Beth y dymunwn ei wneud?

Hoffai Llywodraeth Cymru **gysylltu eich atebion arolwg dienw chi**, i wybodaeth ddienw arall amdanoch chi sydd ar gael i Lywodraeth Cymru, y Gwasanaeth Iechyd Gwladol (GIG) neu sefydliadau cyhoeddus eraill. Er enghraifft, cofnodion meddyg teulu, ysbty a chofnodion addysg.

Pam rydym am gysylltu eich atebion arolwg?

Bydd cysylltu eich atebion yn rhoi llawer o wybodaeth ychwanegol i ymchwilyr sydd wedi'u cymeradwyo, Llywodraeth Cymru a sefydliadau cyhoeddus eraill fel y gallant gael darlun cliriach o faterion yng Nghymru a sut i ddellio à nhw.

Beth fydd yn digwydd i'm gwybodaeth?

Bydd Llywodraeth Cymru, NHS, a sefydliadau cyhoeddus eraill yn gysylltu eich atebion arolwg i wybodaeth ddienw arall amdanoch chi sydd ar gael i Lywodraeth Cymru, y GIG neu sefydliadau cyhoeddus eraill. Dim ond prosiectau a budd cyhoeddus clir bydd yn cael eu cymeradwyo. Dim ond prosiectau a budd cyhoeddus clir bydd yn cael eu cynnwys yn y data cysylltiedig, a w

Pwy fydd yn gallu defnyddio'r data sydd wedi cael eu cysylltu?

Bydd y data ar gael drwy ddefnyddio Amgylchedd Ymchwil Ddiogel i ymchwilyr sydd wedi'u cymeradwyo o Lywodraeth Cymru, prifysgolion neu sefydliadau achrededig ar gyfer prosiectau a gymeradwydd gan Lywodraeth Cymru. Dim ond prosiectau a budd cyhoeddus clir bydd yn cael eu cymeradwyo.

Cyn y caniateir ymchwilyr i gael gafael ar ddata gan ddefnyddio amgylchedd ymchwil diogel, rhaid iddynt gwblhau cwrs hyfforddi i wneud yn siŵr eu bod yn deall sut i ddellio à data dienw cysylltiedig yn ddiogel, yn gyfreithlon ac yn gyfrifol.

Ble gallaf gael mwy o wybodaeth am hyn?

I gael rhagor o wybodaeth ewch i wefan Arolwg Cenedlaethol Cymru:

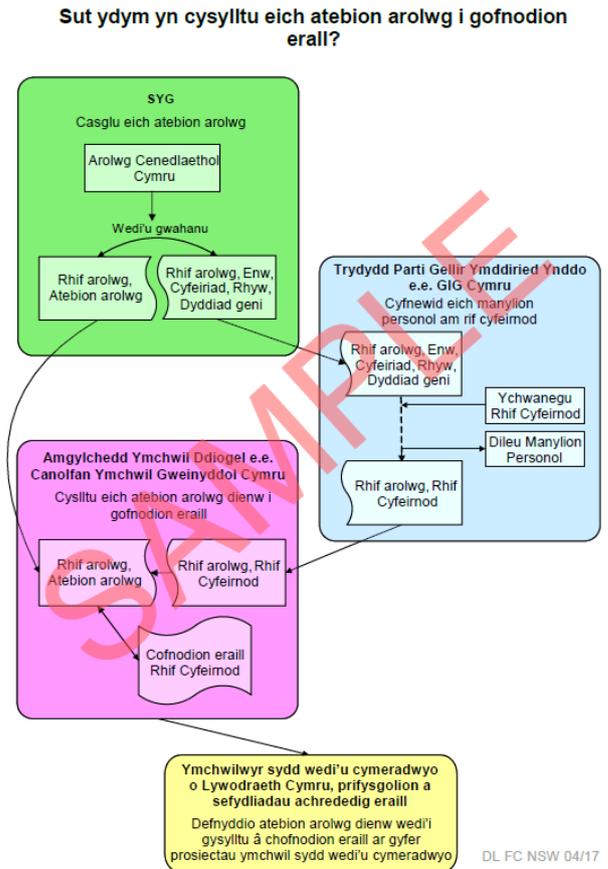
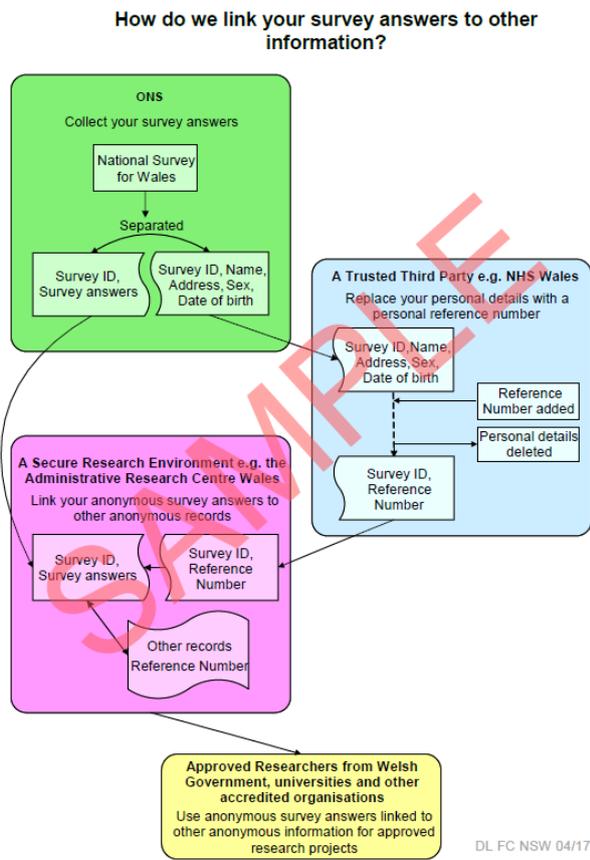
www.llyw.cymru/cysylltudataarolwgenedlaethol

Ceir manylion ar sut yr ydym yn storio a phrosesu gwybodaeth yn:

www.llyw.cymru/arolwgenedlaetholgyby

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Figure G.2: Data linkage flowchart



Annex H – ‘Thank You’ leaflet



National Survey for Wales

Thank you

www.gov.wales/nationalsurveyinfo

Thank you for taking part in the National Survey for Wales

We appreciate you giving your time to take part in this important study.

The information you have provided will be treated in the strictest confidence and only used for statistical and research purposes.

For more information on the study, or to see previous results, visit our website: www.gov.wales/nationalsurvey

Useful contacts

Arts Council of Wales
The country's funding and development agency for the arts.
www.arts.wales
029 2044 1300

Sport Wales
Responsible for developing and promoting sport and physical activity in Wales.
www.sport.wales
0300 300 3111

Natural Resources Wales
Working to maintain the environment and natural resources of Wales.
www.naturalresources.wales
0300 065 3000

NHS Direct Wales
Health advice and information, 24 hours a day.
www.nhsdirect.wales.nhs.uk
0845 4647

Money Advice Service

Free, independent advice on money issues.
www.moneyadviceservice.org.uk
0800 138 7777

Citizens Advice

Advice on a wide range of issues.
www.citizensadvice.org.uk/wales
0344 477 2020

Time to Change Wales

Advice on mental health issues.
www.timetochangewales.org.uk

The organisations listed above are independent of the Welsh Government.

Nest

Advice to help make homes warmer.
www.nestwales.org.uk
0808 808 2244

This interview was carried out by:
Interviewer name: _____

Interviewer number: _____

Working for the Office for National Statistics, on behalf of the Welsh Government.

TYL NSW 04/17



Arolwg Cenedlaethol Cymru

Diolch yn Fawr

www.llyw.cymru/arolwgcenedlaetholgwyb

Diolch am gymryd rhan yn Arolwg Cenedlaethol Cymru

Rydym yn gwerthfawrogi eich bod yn rhoi eich amser i gymryd rhan yn yr astudiaeth bwysig hon.

Bydd yr wybodaeth yr ydych chi wedi ei darparu yn cael ei thrin yn gwbl gyfrinachol a dim ond yn cael ei defnyddio at ddibenion ystadegol ac ymchwil.

Am ragor o wybodaeth am yr astudiaeth, neu i weld canlyniadau blaenorol, ewch i'n gwefan:
www.llyw.cymru/arolwgcenedlaethol

Gwybodaeth gyswilt defnyddiol

Cyngor Celfyddydau Cymru
Y corff sy'n datblygu a chyllido'r celfyddydau yng Nghymru.
www.celf.cymru
0292 044 1300

Chwaraeon Cymru
Yn gyfrifol am ddatblygu a hybu chwaraeon a gweithgaredd corfforol yng Nghymru.
www.chwaraeon.cymru
0845 045 0904

Cyfoeth Naturiol Cymru
Gweithio i gynnal yr amgylchedd ac adnoddau naturiol Cymru.
www.cyfoethnaturiol.cymru
0300 065 3000

Galw IECHYD Cymru
Cyngor a gwybodaeth iechyd, 24 awr y dydd.
www.galwiechyd.cymru.wales.nhs.uk
0845 4647

Gwasanaeth Cyngor Ariannol
Darparu cyngor am ddim a diduedd.
www.moneyadviceservice.org.uk/cy
0300 500 5555

Y Ganolfan Cyngor ar Bopeth
Darparu gwybodaeth a chyngor ar amrywiaeth eang o faterion.
www.citizensadvice.org.uk/cymraeg
0345 404 0505

Amser i Newid Cymru
Darparu gwybodaeth a chyngor ar faterion iechyd meddwl.
www.amserinewidcymru.org.uk

Mae'r sefydliadau a restrir uchod yn annibynnol o Lywodraeth Cymru

Nyth
Cyngor i helpu i wneud cartrefi'n gynhesach.
<https://www.nestwales.org.uk/cy/hafan>
0808 808 2244

Cynhaliwyd y cyfweiliad hwn gan:
Enw'r cyfweilydd: _____

Rhif y cyfweilydd: _____

Yn gweithio i'r Swyddfa Ystadegau Gwladol ar ran Llywodraeth Cymru.

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Annex I – List of derived variables

Variable name	Short label - English	Short topic
Dv2011OAC	Derived variable - ONS Output Area Classification	Geographical area
DvAdBdLnMD	Derived variable - Respondent routed to additional adult (non-pensioner) material deprivation questions	Adult material deprivation
DvAdMatDep	Derived variable - Non-pensioner adults in material deprivation	Adult material deprivation
DvAgeGrp3	Derived variable - Age (3 groups)	Demographic information
DvAgeGrp5	Derived variable - Age (5 groups)	Demographic information
DvAgeGrp7	Derived variable - Age (7 groups) (10 year bands)	Demographic information
DvAgeGrp80	Derived variable - Age (5 groups, with 80+)	Demographic information
Dvalcmaxagbi	Derived variable - Max daily consumption last week: above guidelines - binary [SamplePopHlthWeight]	Alcohol consumption
Dvalcmaxbibi	Derived variable - Max daily alcohol consumption last week: binge - binary [SamplePopHlthWeight]	Alcohol consumption
Dvalcmaxgrp	Derived variable - Max daily alcohol consumption last week groups [SamplePopHlthWeight]	Alcohol consumption
Dvalcmaxvhbi	Derived variable - Max daily alcohol consumption last week: very heavy drinking over 3 times guidelines - binary [SamplePopHlthWeight]	Alcohol consumption
Dvalcusgrp	Derived variable - Usual weekly consumption groups [SamplePopHlthWeight]	Alcohol consumption
Dvalcusgrp2	Derived variable – Average weekly alcohol consumption extra groups incl. non-drinkers [SamplePopHlthWeight]	Alcohol consumption
Dvalcusgrp3	Derived variable – Average weekly alcohol consumption extra groups excl. non-drinkers [SamplePopHlthWeight]	Alcohol consumption
Dvalcusharmbi	Derived variable - Average weekly alcohol consumption harmful (>50(m) / 35(f) units) [SamplePopHlthWeight]	Alcohol consumption

Variable name	Short label - English	Short topic
Dvalcusharmbidr	Derived variable - Average weekly alcohol consumption harmful excl non-drinkers (>50(m) / 35(f) units) [SamplePopHlthWeight]	Alcohol consumption
Dvalcushazbi	Derived variable - Average weekly alcohol consumption hazardous not harmful (>14 up to 50(m) / 35(f) units) [SamplePopHlthWeight]	Alcohol consumption
Dvalcushazbidr	Derived variable - Average weekly alcohol consumption hazardous not harmful excl non-drinkers (>14 up to 50(m) / 35(f) units) [SamplePopHlthWeight]	Alcohol consumption
Dvalcushibi	Derived variable - Usual weekly consumption binary - Higher risk, drinking above guidelines (>14 units) [SamplePopHlthWeight]	Alcohol consumption
DvAsEcArea	Derived variable - Assembly Economic Fora Area	Geographical area
DvAtPsModeTravBus	Derived variable - usual mode of travel to primary school - Bus	Active travel
DvAtPsModeTravCL	Derived variable - usual mode of travel to primary school - Car or lift	Active travel
DvAtPsModeTravWik	Derived variable - usual mode of travel to primary school - Walking	Active travel
DvAtSsModeTravBus	Derived variable - usual mode of travel to secondary school - Bus	Active travel
DvAtSsModeTravCL	Derived variable - usual mode of travel to secondary school - Car or lift	Active travel
DvAtSsModeTravWik	Derived variable - usual mode of travel to secondary school - Walking	Active travel
DvAtWikBke10	Derived variable - Walks (10mins+) or cycles at least once a week as means of transport	Physical activity
Dvbmi	Derived variable - Body Mass Index [SamplePopHlthWeight]	BMI
Dvbmi2	Derived variable - Body Mass Index (excl pregnant women) [SamplePopHlthWeight]	BMI
Dvbmihealthy2	Derived variable - Body Mass Index classification (excl pregnant women) (healthy BMI) [SamplePopHlthWeight]	BMI

Variable name	Short label - English	Short topic
Dvbmilev2	Derived variable - Body Mass Index classification (excl pregnant women) [SamplePopHlthWeight]	BMI
Dvbmimorb2	Derived variable - Body Mass Index classification (excl pregnant women) (incl. 40+) [SamplePopHlthWeight]	BMI
Dvbmiobese2	Derived variable - BMI Obese (excl pregnant women) [SamplePopHlthWeight]	BMI
Dvbmio wob2	Derived variable - BMI Overweight or obese (excl pregnant women) [SamplePopHlthWeight]	BMI
DvBUA	Derived variable - Built-up areas	Geographical area
DvCBLWeek	Derived variable - Carrier Bag Use - did a 'large' food and groceries shop in last 7 days [SampleShopRecWeight]	Carrier Bag Use
DvCBOWeek	Derived variable - Carrier Bag Use - did an 'other' type of shop (not food/groceries) in last 7 days [SampleShopRecWeight]	Carrier Bag Use
DvCBSWeek	Derived variable - Carrier Bag Use - did a 'small' food and groceries shop in last 7 days [SampleShopRecWeight]	Carrier Bag Use
DvChBdLnMD	Derived variable - Respondent routed to additional child material deprivation questions	Material deprivation
DvChildEdu	Derived variable - Respondent has a child in full-time education	Other
DvChMatDep	Derived variable - Child(ren) in material deprivation	Material deprivation
DvComFrst	Derived variable – Communities First Cluster or not	Geographical area
DvComFrstClust	Derived variable – Communities First Cluster	Geographical area
Dvdevicewd1	Derived variable - Electronic device used on weekday for 1 hour or more a day [SampleChildWeight]	Child screen time
Dvdevicewd2	Derived variable - Electronic device used on weekday for 2 hours or more a day [SampleChildWeight]	Child screen time
Dvdevicewe1	Derived variable - Electronic device used at weekend for 1 hour or more a day [SampleChildWeight]	Child screen time
Dvdevicewe2	Derived variable - Electronic device used at weekend for 2 hours or more a day [SampleChildWeight]	Child screen time
DvDn7dbi	Derived variable - Drank in last 7 days - binary	Alcohol consumption

Variable name	Short label - English	Short topic
	[SamplePopHlthWeight]	
DvDnFreq0	Derived variable - Drinking frequency (incl. non-drinkers) [SamplePopHlthWeight]	Alcohol consumption
Dvdualfirst	Derived variable - Dual users tobacco and e-cigarettes - which used first [SamplePopHlthWeight]	Smoking
Dvecigevbi	Derived variable - E-cigarette ever used - binary [SamplePopHlthWeight]	Smoking
Dvecignbi	Derived variable - E-cigarette used now - binary [SamplePopHlthWeight]	Smoking
DvEconDevReg	Derived variable - Economic Development regions	Geographical area
DvEcoStat	Derived variable - Economic Status	Employment
DvEcoStat3	Derived variable - Economic Status (3 classifications)	Employment
DvElecWard	Derived variable - Electoral Wards	Geographical area
DvElecWardCd	Derived variable - Electoral Wards (geography codes)	Geographical area
DvEthnicity	Derived variable - Ethnicity (in three groups)	Demographic information
Dvexinall	Derived variable - Exposed to tobacco smoke indoors - all [SamplePopHlthWeight]	Smoking
Dvexinnsm	Derived variable - Exposed to tobacco smoke indoors - non-smokers only [SamplePopHlthWeight]	Smoking
Dvexouall	Derived variable - Exposed to tobacco smoke outdoors - all [SamplePopHlthWeight]	Smoking
Dvexounsm	Derived variable - Exposed to tobacco smoke outdoors - non-smokers only [SamplePopHlthWeight]	Smoking
Dvexpoall	Derived variable - Exposed to tobacco smoke - all [SamplePopHlthWeight]	Smoking
Dvexponsm	Derived variable - Exposed to tobacco smoke - non-smokers only [SamplePopHlthWeight]	Smoking
Dvfairbadhealth	Derived variable - Fair or bad health	General health
DvFGComm	Derived variable - Have a sense of community (belonging; different backgrounds get on, treat with respect)	Community

Variable name	Short label - English	Short topic
DvFGHealth1	Derived variable - People with fewer than 2 healthy lifestyle behaviours (not smoking, healthy weight, eat 5 fruit or veg, not drinking above guidelines, active). (FG indicator) [SamplePopHlthWeight]	General health
DvFGHealth4	Derived variable - People with 4 or 5 healthy lifestyle behaviours (not smoking, healthy weight, eat 5 fruit or veg, not drinking above guidelines, active). (FG indicator) [SamplePopHlthWeight]	General health
DvFGHealthyB	Derived variable - Number of healthy lifestyle behaviours (not smoking, healthy weight, eat 5 fruit or veg, not drinking above guidelines, active) [SamplePopHlthWeight]	General health
DvFGLocServ	Derived variable - Satisfied with ability to get to services and facilities (FG indicator)	Local authority services
DvFGSafe	Derived variable - People feeling safe (at home, walking in the local area, and travelling)	Community
DvFGSport	Derived variable - Participation in sporting activities three or more times a week (FG indicator)	Sport - participation
DvFGWelsh	Derived variable - People using Welsh language in everyday life (FG indicator 36)	Welsh language - use
DvFinBilCred	Derived variable - Keeping up with bills	Material deprivation
DvFireReg	Derived variable - Fire & Rescue Service region	Geographical area
Dvfrix	Derived variable - Moderate or vigorous activity on Friday [SamplePopHlthWeight]	Physical activity
DvFrqPrtSport4	Derived variable - Frequency of participation in sport (average per week)	Sport - participation
Dvfrtpor2	Derived variable - Total portion of fruit [SamplePopHlthWeight]	Diet
DvFusProg	Derived variable – Fusion Programme Communities First Cluster areas	Geographical area
Dvfv52	Derived variable - Eaten 5+ fruit or veg the previous day - binary [SamplePopHlthWeight]	Diet
Dvfv5aday2	Derived variable - No of portions of fruit and vegetables eaten yesterday [SamplePopHlthWeight]	Diet
Dvgenhealth3	Derived variable - General health (3	General health

Variable name	Short label - English	Short topic
	groups)	
Dvgoodhealth	Derived variable - Good general health	General health
DvHh60OrOvr	Derived variable - Household contains adult aged 60 or over	Demographic information
DvHhSCCarer	Derived variable - Household contains carer	Social care services
DvHhSCUse	Derived variable - Household contains someone receiving help from care and support services in Wales	Social care services
DvHhType	Derived variable - Household type (original)	Demographic information
DvHhType2	Derived variable – Household type (new groups)	Demographic information
DvHhUnd5	Derived variable - Household contains child aged under 5	Demographic information
DvHhUnd16	Derived variable - Household contains child aged under 16	Demographic information
DvHhUnd19	Derived variable - Household contains child aged under 19	Demographic information
DvHiQual2	Derived variable - Highest educational qualification (apprenticeship variables and responses combined)	Education
Dvhtcm	Derived variable - Height : in cm - computed from Feet/inches if necessary [SamplePopHlthWeight]	BMI
Dvillchap1	Derived variable - Individual has Neoplasms and benign growths	Illness
Dvillchap2	Derived variable - Individual has Endocrine and metabolic diseases	Illness
Dvillchap3	Derived variable - Individual has Mental disorders	Illness
Dvillchap4	Derived variable - Individual has Nervous system illness	Illness
Dvillchap5	Derived variable - Individual has Eye complaints	Illness
Dvillchap6	Derived variable - Individual has Ear complaints	Illness
Dvillchap7	Derived variable - Individual has Heart and circulatory illness	Illness
Dvillchap8	Derived variable - Individual has Respiratory system illness	Illness
Dvillchap9	Derived variable - Individual has Digestive system illness	Illness
Dvillchap10	Derived variable - Individual has Genito-urinary system illness	Illness
Dvillchap11	Derived variable - Individual has Musculoskeletal illness	Illness

Variable name	Short label - English	Short topic
Dvillchap12	Derived variable - Individual has Infectious diseases	Illness
Dvillchap13	Derived variable - Individual has Blood and related organs illness	Illness
Dvillchap14	Derived variable - Individual has Skin complaints	Illness
Dvillchap15	Derived variable - Individual has Other illness	Illness
Dvillchap16	Derived variable - Individual has Unclassifiable	Illness
Dvillness0	Derived variable - Individual has No longstanding illness	Illness
Dvillness1	Derived variable - Individual has Cancer (neoplasm) including lumps, masses, tumours and growths and benign (non-malignant) lumps and cysts	Illness
Dvillness2	Derived variable - Individual has Diabetes incl. Hyperglycaemia	Illness
Dvillness3	Derived variable - Individual has Other endocrine - metabolic	Illness
Dvillness4	Derived variable - Individual has Mental illness - anxiety - depression - nerves (nes)	Illness
Dvillness5	Derived variable - Individual has learning disability	Illness
Dvillness6	Derived variable - Individual has Epilepsy - fits - convulsions	Illness
Dvillness7	Derived variable - Individual has Migraine - headaches	Illness
Dvillness8	Derived variable - Individual has Other problems of nervous system	Illness
Dvillness9	Derived variable - Individual has Cataract - poor eye sight - blindness	Illness
Dvillness10	Derived variable - Individual has Other eye complaints	Illness
Dvillness11	Derived variable - Individual has Poor hearing - deafness	Illness
Dvillness12	Derived variable - Individual has Tinnitus - noises in the ear	Illness
Dvillness13	Derived variable - Individual has Meniere's disease - ear complaints causing balance problems	Illness
Dvillness14	Derived variable - Individual has Other ear complaints	Illness
Dvillness15	Derived variable - Individual has Stroke - cerebral haemorrhage - cerebral thrombosis	Illness
Dvillness16	Derived variable - Individual has Heart attack - angina	Illness

Variable name	Short label - English	Short topic
Dvillness17	Derived variable - Individual has Hypertension - high blood pressure - blood pressure (nes)	Illness
Dvillness18	Derived variable - Individual has Other heart problems	Illness
Dvillness19	Derived variable - Individual has Piles - haemorrhoids incl. Varicose Veins in anus	Illness
Dvillness20	Derived variable - Individual has Varicose veins - phlebitis in lower extremities	Illness
Dvillness21	Derived variable - Individual has Other blood vessels - embolic	Illness
Dvillness22	Derived variable - Individual has Bronchitis - emphysema	Illness
Dvillness23	Derived variable - Individual has Asthma	Illness
Dvillness24	Derived variable - Individual has Hayfever	Illness
Dvillness25	Derived variable - Individual has Other respiratory complaints	Illness
Dvillness26	Derived variable - Individual has Stomach ulcer - ulcer (nes) - abdominal hernia - rupture	Illness
Dvillness27	Derived variable - Individual has Other digestive complaints (stomach, liver, pancreas, bile ducts, small intestine - duodenum, jejunum and ileum)	Illness
Dvillness28	Derived variable - Individual has Complaints of bowel - colon (large intestine, caecum, bowel, colon, rectum)	Illness
Dvillness29	Derived variable - Individual has Complaints of teeth - mouth - tongue	Illness
Dvillness30	Derived variable - Individual has Kidney complaints	Illness
Dvillness31	Derived variable - Individual has Urinary tract infection	Illness
Dvillness32	Derived variable - Individual has Other bladder problems - incontinence	Illness
Dvillness33	Derived variable - Individual has Reproductive system disorders	Illness
Dvillness34	Derived variable - Individual has Arthritis - rheumatism - fibrositis	Illness
Dvillness35	Derived variable - Individual has Back problems - slipped disc - spine - neck	Illness
Dvillness36	Derived variable - Individual has Other problems of bones - joints -	Illness

Variable name	Short label - English	Short topic
	muscles	
Dvillness37	Derived variable - Individual has Infectious and parasitic disease	Illness
Dvillness38	Derived variable - Individual has Disorders of blood and blood forming organs	Illness
Dvillness39	Derived variable - Individual has Skin complaints	Illness
Dvillness40	Derived variable - Individual has Other complaints	Illness
Dvillness41	Derived variable - Individual has Unclassifiable	Illness
DvIntNumActs	Derived variable - Internet skills - Number of internet activities carried out in the past 4 weeks	Internet
DvIntNumActsR	Derived variable - Internet skills - Number of internet activities carried out in the past 3 months	Internet
DvIntNumSkills	Derived variable - Internet skills - Number of digital skills categories achieved	Internet
DvIntNumSkillsR	Derived variable - Internet skills - Number of digital skills categories achieved (in past 3 months)	Internet
DvIntPersUse	Derived variable - Internet - Personal use of internet at home, work or elsewhere	Internet
DvIntSkills1	Derived variable - Internet skills - Digital skills category - Managing Information (in past 4 weeks)	Internet
DvIntSkills2	Derived variable - Internet skills - Digital skills category – Communicating (in past 4 weeks)	Internet
DvIntSkills3	Derived variable - Internet skills - Digital skills category – Transacting (in past 4 weeks)	Internet
DvIntSkills4	Derived variable - Internet skills - Digital skills category - Problem solving (in past 4 weeks)	Internet
DvIntSkills5	Derived variable - Internet skills - Digital skills category – Creating (in past 4 weeks)	Internet
DvIntSkillsR1	Derived variable - Internet skills - Digital skills category - Managing Information (in past 3 months)	Internet
DvIntSkillsR2	Derived variable - Internet skills - Digital skills category - Communicating (in past 3 months)	Internet
DvIntSkillsR3	Derived variable - Internet skills - Digital skills category - Transacting	Internet

Variable name	Short label - English	Short topic
	(in past 3 months)	
DvIntSkillsR4	Derived variable - Internet skills - Digital skills category - Problem solving (in past 3 months)	Internet
DvIntSkillsR5	Derived variable - Internet skills - Digital skills category - Creating (in past 3 months)	Internet
DvLA	Derived variable - Local Authority	Geographical area
DvLACd	Derived variable - Local Authority (geography codes)	Geographical area
DvLDAny	Derived variable - Latent demand for any activity	Sport - latent demand
DvLDAnyInGam	Derived variable - Latent demand for any indoor game or activity	Sport - latent demand
DvLDAnyOutGam	Derived variable - Latent demand for any outdoor game or activity	Sport - latent demand
DvLDAnyOutPur	Derived variable - Latent demand for any outdoor pursuit	Sport - latent demand
DvLDExclWIk	Derived variable - Latent demand for any activity excluding walking	Sport - latent demand
DvLHB	Derived variable - Local health board	Geographical area
DvLHB2019	Derived variable - Local health board (2019 definition)	Geographical area
DvLHBCd	Derived variable - Local health board (geography codes)	Geographical area
DvLHBCd2019	Derived variable - Local health board (2019 definition) - geography code	Geographical area
Dvlimany	Derived variable - Limited at all by longstanding illness	Illness
Dvlimill1	Derived variable - Cancer (neoplasm) including benign (non-malignant) lumps and cysts limits individual	Illness
Dvlimill2	Derived variable - Diabetes incl. hyperglycaemia limits individual	Illness
Dvlimill3	Derived variable - Other endocrine/metabolic complaint limits individual	Illness
Dvlimill4	Derived variable - Mental illness/anxiety/depression/nerves limits individual	Illness
Dvlimill5	Derived variable - Mental handicap limits individual	Illness
Dvlimill6	Derived variable - Epilepsy/fits/convulsions limits individual	Illness
Dvlimill7	Derived variable -	Illness

Variable name	Short label - English	Short topic
	Migraine/headaches limits individual	
Dvlimill8	Derived variable - Other problems of nervous system limit individual	Illness
Dvlimill9	Derived variable - Cataract/poor eye sight/blindness limits individual	Illness
Dvlimill10	Derived variable - Other eye complaints limit individual	Illness
Dvlimill11	Derived variable - Poor hearing/deafness limits individual	Illness
Dvlimill12	Derived variable - Tinnitus/noises in the ear limits individual	Illness
Dvlimill13	Derived variable - Meniere's disease/ear complaints causing balance problems limits individual	Illness
Dvlimill14	Derived variable - Other ear complaints limits individual	Illness
Dvlimill15	Derived variable - Stroke/cerebral haemorrhage/cerebral thrombosis limits individual	Illness
Dvlimill16	Derived variable - Heart attack/angina limits individual	Illness
Dvlimill17	Derived variable - Hypertension/high blood pressure/blood pressure limits individual	Illness
Dvlimill18	Derived variable - Other heart problems limits individual	Illness
Dvlimill19	Derived variable - Piles/haemorrhoids limits individual	Illness
Dvlimill20	Derived variable - Varicose veins/phlebitis in lower extremities limits individual	Illness
Dvlimill21	Derived variable - Other blood vessels/embolic limits individual	Illness
Dvlimill22	Derived variable - Bronchitis/emphysema limits individual	Illness
Dvlimill23	Derived variable - Asthma limits individual	Illness
Dvlimill24	Derived variable - Hayfever limits individual	Illness
Dvlimill25	Derived variable - Other respiratory complaints limits individual	Illness
Dvlimill26	Derived variable - Stomach ulcer/ulcer/abdominal hernia/rupture limits individual	Illness
Dvlimill27	Derived variable - Other digestive complaints (stomach, liver, pancreas etc.) limits individual	Illness
Dvlimill28	Derived variable - Complaints of bowel/colon/rectum limits individual	Illness

Variable name	Short label - English	Short topic
Dvlimill29	Derived variable - Complaints of teeth/mouth/tongue limits individual	Illness
Dvlimill30	Derived variable - Kidney complaints limits individual	Illness
Dvlimill31	Derived variable - Urinary tract infection limits individual	Illness
Dvlimill32	Derived variable - Other bladder problems/incontinence limits individual	Illness
Dvlimill33	Derived variable - Reproductive system disorders limits individual	Illness
Dvlimill34	Derived variable - Arthritis/rheumatism/fibrositis limits individual	Illness
Dvlimill35	Derived variable - Back problems/slipped disc/spine/neck limits individual	Illness
Dvlimill36	Derived variable - Other problems of bones/joints/muscles limits individual	Illness
Dvlimill37	Derived variable - Infectious and parasitic disease limits individual	Illness
Dvlimill38	Derived variable - Disorders of blood and blood forming organs limits individual	Illness
Dvlimill39	Derived variable - Skin complaints limits individual	Illness
Dvlimill40	Derived variable - Other complaint limits individual	Illness
Dvlimill41	Derived variable - Unclassifiable complaint limits individual	Illness
Dvlimillchap1	Derived variable - Neoplasms and benign growths (1) limit individual	Illness
Dvlimillchap2	Derived variable - Endocrine and metabolic diseases (2-3) limit individual	Illness
Dvlimillchap3	Derived variable - Mental disorders (4-5) limit individual	Illness
Dvlimillchap4	Derived variable - Nervous system complaints (6-8) limit individual	Illness
Dvlimillchap5	Derived variable - Eye complaints (9-10) limit individual	Illness
Dvlimillchap6	Derived variable - Ear complaints (11-14) limit individual	Illness
Dvlimillchap7	Derived variable - Heart and circulatory complaints (15-21) limit individual	Illness
Dvlimillchap8	Derived variable - Respiratory system complaints (22-25) limit individual	Illness

Variable name	Short label - English	Short topic
Dvlimillchap9	Derived variable - Digestive system complaints (26-29) limit individual	Illness
Dvlimillchap10	Derived variable - Genito-urinary system complaints (30-33) limit individual	Illness
Dvlimillchap11	Derived variable - Musculoskeletal complaints (34-36) limit individual	Illness
Dvlimillchap12	Derived variable - Infectious diseases (37) limit individual	Illness
Dvlimillchap13	Derived variable - Blood and related organs complaints (38) limit individual	Illness
Dvlimillchap14	Derived variable - Skin complaints (39) limit individual	Illness
Dvlimillchap15	Derived variable - Other complaint limits individual	Illness
Dvlimillchap16	Derived variable - Unclassifiable complaint limits individual	Illness
Dvlimlot	Derived variable - Limited a lot by longstanding illness	Illness
Dvlimnum	Derived variable - Number of limiting illnesses	Illness
Dvlimnumgrp	Derived variable - Number of limiting illnesses (grouped)	Illness
DvLLTI	Derived variable - Has a limiting long-standing illness, disability or infirmity	Illness
Dvlsill	Derived variable - Any longstanding illness	Illness
Dvlsillnum	Derived variable - Number of longstanding illnesses	Illness
Dvlsillnumgrp	Derived variable - Number of longstanding illnesses (grouped)	Illness
DvLSOA2001	Derived variable - Lower super output area (based on 2001 Census)	Geographical area
DvLSOA2011	Derived variable - Lower super output area (based on 2011 Census)	Geographical area
DvMatDep	Derived variable - Material deprivation (adults and pensioners combined)	Material deprivation
Dvmodexday	Derived variable - Moderate activity in last 7 days - number of days [SamplePopHlthWeight]	Physical activity
Dvmodexmw	Derived variable - Total minutes moderate activity per week [SamplePopHlthWeight]	Physical activity
Dvmodexweek	Derived variable - Any moderate activity in last 7 days - binary [SamplePopHlthWeight]	Physical activity

Variable name	Short label - English	Short topic
Dvmonx	Derived variable - Moderate or vigorous activity on Monday [SamplePopHlthWeight]	Physical activity
DvMSOA2011	Derived variable - Middle super output area (based on 2011 Census)	Geographical area
Dvmvdays	Derived variable - Number of at least moderately active days per week [SamplePopHlthWeight]	Physical activity
Dvmvinact	Derived variable - MVPA inactive <30 minutes weekly [SamplePopHlthWeight]	Physical activity
Dvmvpa150	Derived variable - MVPA meets guidelines 150 minutes weekly [SamplePopHlthWeight]	Physical activity
Dvmvpagrp2	Derived variable - MVPA minutes per week - 3 groups [SamplePopHlthWeight]	Physical activity
Dvmvpamw	Derived variable - MVPA minutes per week [SamplePopHlthWeight]	Physical activity
DvNeet	Derived variable - Not in education, employment or training (NEET) status (aged 16-18)	Employment
DvNeet2	Derived variable - Not in education, employment or training (NEET) status (aged 16-25)	Employment
Dvnondrink	Derived variable - Non drinker (not even occasional) [SamplePopHlthWeight]	Alcohol consumption
DvPartArts	Derived variable - Participated in an arts activity in past 12 months (2018-19 list of events)	Arts, culture and heritage
DvPartArtsFreq	Derived variable - How often participated in arts activity in past 12 months (2018-19 list of events)	Arts, culture and heritage
DvPartArtsFreqAll	Derived variable - How often participated in arts activity in past 12 months (all persons) (2018-19 list of events) [SampleACWWeight]	Arts, culture and heritage
DvPCArea	Derived variable - Postcode area	Geographical area
DvPenFlag	Derived variable - Pensionable age at time of interview	Demographic information
DvPnBdLnMD	Derived variable - Respondent routed to additional pensioner material deprivation questions	Material deprivation
DvPnMatDep	Derived variable - Pensioner in material deprivation	Material deprivation
DvPolReg	Derived variable - Police region	Geographical area
Dvporfv2	Derived variable - Total portion of fruit and veg [SamplePopHlthWeight]	Diet

Variable name	Short label - English	Short topic
DvPrtAny	Derived variable - Participating in any activity	Sport - participation
DvPrtAnyInGam	Derived variable - Participating in any indoor game or activity	Sport - participation
DvPrtAnyOutGam	Derived variable - Participating in any outdoor game or activity	Sport - participation
DvPrtAnyOutPur	Derived variable - Participating in any outdoor pursuit	Sport - participation
DvPrtExclWlk	Derived variable - Participating in any activity excluding walking	Sport - participation
DvPSFoot	Derived variable - Public services footprint	Geographical area
DvRegions	Derived variable - ACW and Sports Wales regions	Geographical area
DvRegions2	Derived variable - Regions of Wales (for Welsh language use analysis)	Geographical area
DvReligion	Derived variable - Religion (three groups)	Demographic information
Dvsatx	Derived variable - Moderate or vigorous activity on Saturday [SamplePopHlthWeight]	Physical activity
DvSCCarer	Derived variable - Social care service - received help from care and support services as a carer	Social care services
DvScDkRef	Derived variable - Social care service - received help from care and support services - Dk/Ref	Social care services
DvScNeither	Derived variable - Social care service - not received help from care and support services	Social care services
DvSCUser	Derived variable - Social care service - received help from care and support services as a User	Social care services
DvSeeArts	Derived variable - Attended an arts events in past 12 months (2018-19 list of events)	Arts, culture and heritage
DvSeeArtsFreq	Derived variable - How often attended arts event in past 12 months (2018-19 list of events)	Arts, culture and heritage
DvSeeArtsFreqAll	Derived variable - How often attended an arts activity in past 12 months (all persons) (2018-19 list of events) [SampleACWWeight]	Arts, culture and heritage
DvSexOrient	Derived variable - Sexual Orientation (three groups)	Demographic information
Dvsmokec	Derived variable - Currently smoke either daily or occasionally [SamplePopHlthWeight]	Smoking
Dvsmokstat	Derived variable - Smoking status [SamplePopHlthWeight]	Smoking

Variable name	Short label - English	Short topic
Dvstpsmk1m	Derived variable - Gave up smoking at least one month ago - binary [SamplePopHlthWeight]	Smoking
Dvstpsmk1y	Derived variable - Gave up smoking at least one year ago - binary [SamplePopHlthWeight]	Smoking
Dvsunx	Derived variable - Moderate or vigorous activity on Sunday [SamplePopHlthWeight]	Physical activity
DvTenurGrp	Derived variable - Tenure	Housing
DvTenurGrp2	Derived variable - Tenure (grouped)	Housing
Dvthux	Derived variable - Moderate or vigorous activity on Thursday [SamplePopHlthWeight]	Physical activity
Dvtotscreenwd	Derived variable - Total screen time on weekday [SampleChildWeight]	Child screen time
Dvtotscreenwd1	Derived variable - Total screen time on weekday - 1 hour or more a day [SampleChildWeight]	Child screen time
Dvtotscreenwd2	Derived variable - Total screen time on weekday - 2 hours or more a day [SampleChildWeight]	Child screen time
Dvtotscreenwe	Derived variable - Total screen time at weekend [SampleChildWeight]	Child screen time
Dvtotscreenwe1	Derived variable - Total screen time at weekend - 1 hour or more a day [SampleChildWeight]	Child screen time
Dvtotscreenwe2	Derived variable - Total screen time at weekend - 2 hours or more a day [SampleChildWeight]	Child screen time
Dvtrygupbi	Derived variable - Tried to give up smoking (in last 12 months) - binary [SamplePopHlthWeight]	Smoking
Dvtuex	Derived variable - Moderate or vigorous activity on Tuesday [SamplePopHlthWeight]	Physical activity
DvTvwd1	Derived variable - TV watched on weekday for 1 hour or more a day [SampleChildWeight]	Child screen time
DvTvwd2	Derived variable - TV watched on weekday for 2 hours or more a day [SampleChildWeight]	Child screen time
DvTvwe1	Derived variable - TV watched at weekend for 1 hour or more a day [SampleChildWeight]	Child screen time
DvTvwe2	Derived variable - TV watched at weekend for 2 hours or more a day [SampleChildWeight]	Child screen time
DvTxAir	Derived variable - Tax - How much control do you think the Welsh Government currently has over the	Tax devolution

Variable name	Short label - English	Short topic
	levels of tax on air travel from Wales? [SampleTaxWeight]	
DvTxAlc	Derived variable - Tax - How much control do you think the Welsh Government currently has over levels of tax on alcohol? [SampleTaxWeight]	Tax devolution
DvTxCoun	Derived variable - Tax - How much control do you think the Welsh Government currently has over levels of Council Tax? [SampleTaxWeight]	Tax devolution
DvTxInc	Derived variable - Tax - How much control do you think the Welsh Government currently has over levels of income tax? [SampleTaxWeight]	Tax devolution
DvTxLnd	Derived variable - Tax - How much control do you think the Welsh Government currently has over levels of tax on waste sent to landfill? [SampleTaxWeight]	Tax devolution
DvTxStmp	Derived variable - Tax - How much control do you think the Welsh Government currently has over levels of Stamp Duty? [SampleTaxWeight]	Tax devolution
DvTxVAT	Derived variable - Tax - How much control do you think the Welsh Government currently has over levels of VAT? [SampleTaxWeight]	Tax devolution
Dvunits0	Derived variable - Number of units on the heaviest drinking day last week [SamplePopHlthWeight]	Alcohol consumption
Dvunitswk0	Derived variable - Usual number of weekly alcohol units [SamplePopHlthWeight]	Alcohol consumption
DvUrbRur	Derived variable - Urban/rural classification	Geographical area
DvUrbRurCom	Derived variable - Urban/rural classification – combined	Geographical area
DvUrbRurCon	Derived variable - Urban/rural classification – context	Geographical area
DvUrbRurMor	Derived variable - Urban/rural classification – morphology	Geographical area
DvUSOA2011	Derived variable - Upper super output area (based on 2011 Census)	Geographical area
DvValTask	Derived variable – Valleys Taskforce area	Geographical area

Variable name	Short label - English	Short topic
Dvvegpor2	Derived variable - Total portion of vegetables (incl.salad) [SamplePopHlthWeight]	Diet
Dvvigexday	Derived variable - Vigorous activity in the last 7 days - number of days [SamplePopHlthWeight]	Physical activity
Dvvigexmw	Derived variable - Total minutes vigorous activity per week [SamplePopHlthWeight]	Physical activity
Dvvigexweek	Derived variable - Any vigorous activity in last 7 days - binary [SamplePopHlthWeight]	Physical activity
Dvvigmvmw	Derived variable - Total minutes vigorous activity per week *2 to give moderate intensity minutes [SamplePopHlthWeight]	Physical activity
DvVisit12mAct	Derived variable - Made a visit in the last 12 months - Binary [SampleNRWWeight]	Visits
DvVisitAct	Derived variable - Made a visit in the last 4 weeks - Binary [SampleNRWWeight]	Visits
DvVisitMain	Derived variable - Most recent visit - Main activity undertaken in most recent visit to outdoors [SampleNRWWeight]	Visits
DvVisitMoney	Derived variable - Most recent visit - How much spent doing the main activity (grouped) [SampleNRWWeight]	Visits
DvVisitNo	Derived variable - Visits in the last 4 weeks - Average number of visits (including those who made no visits) [SampleNRWWeight]	Visits
DvVisitTime4w	Derived variable - Most recent visit - How long spent doing the main activity (grouped) [SampleNRWWeight]	Visits
DvWaConst	Derived variable - Welsh Assembly/Parliamentary constituency	Geographical area
DvWaConstCd	Derived variable - Welsh Assembly/Parliamentary constituency (geography codes)	Geographical area
Dvwalkday	Derived variable - Walk in last 7 days - number of days (scale) [SamplePopHlthWeight]	Physical activity
Dvwalkmv	Derived variable - Walking qualifying as moderate activity [SamplePopHlthWeight]	Physical activity

Variable name	Short label - English	Short topic
Dvwalkmw	Derived variable - Total minutes walking per week [SamplePopHlthWeight]	Physical activity
Dvwalkweek	Derived variable - Any walking in the last 7 days - binary [SamplePopHlthWeight]	Physical activity
DvWbAnxYestGrp4	Derived variable - Overall anxiousness yesterday (grouped)	Wellbeing
DvWbHapYestGrp4	Derived variable - Overall happiness yesterday (grouped)	Wellbeing
DvWbLifeWrthGrp4	Derived variable - Overall extent of feeling that the things done in life are worthwhile (grouped)	Wellbeing
DvWbSatlifeGrp4	Derived variable - Overall satisfaction with life (grouped)	Wellbeing
Dvwedx	Derived variable - Moderate or vigorous activity on Wednesday [SamplePopHlthWeight]	Physical activity
DvWeLang1	Derived variable - Welsh language ability - Can speak, read and write Welsh	Welsh language - ability
DvWeLang2	Derived variable - Welsh language ability - Can speak and read Welsh, but not write Welsh	Welsh language - ability
DvWeLang3	Derived variable - Welsh language ability - Can speak Welsh, but can't read or write Welsh	Welsh language - ability
DvWeLang4	Derived variable - Welsh language ability - Can understand spoken Welsh only	Welsh language - ability
DvWelSpkHh	Derived variable - Household members speaking Welsh (aged 3 and over)	Welsh language – household
DvWelSpkWho	Derived variable - Who in household speaks Welsh	Welsh language – household
DvWEMWBS	Warwick-Edinburgh Mental Well-being Scale - total score	Well-being
DvWEMWBSGrp	Derived variable - Warwick-Edinburgh Mental Well-being Scale - Grouped	Well-being
DvWIMDEdu5	Derived variable – Welsh Index of Multiple Deprivation – education score (in quintiles)	Geographical area
DvWIMDEmp5	Derived variable – Welsh Index of Multiple Deprivation – employment score (in quintiles)	Geographical area
DvWIMDEnv5	Derived variable – Welsh Index of Multiple Deprivation – physical environment score (in quintiles)	Geographical area

Variable name	Short label - English	Short topic
DvWIMDHlth5	Derived variable – Welsh Index of Multiple Deprivation – health score (in quintiles)	Geographical area
DvWIMDHse5	Derived variable – Welsh Index of Multiple Deprivation – housing score (in quintiles)	Geographical area
DvWIMDInc5	Derived variable – Welsh Index of Multiple Deprivation – income score (in quintiles)	Geographical area
DvWIMDOvr5	Derived variable – Welsh Index of Multiple Deprivation – overall score (in quintiles)	Geographical area
DvWIMDSafe5	Derived variable – Welsh Index of Multiple Deprivation – community safety score (in quintiles)	Geographical area
DvWIMDServ5	Derived variable – Welsh Index of Multiple Deprivation – access to services score (in quintiles)	Geographical area
DvWIMDOvr10	Derived variable – Welsh Index of Multiple Deprivation – overall score (in deciles)	Geographical area
DvWkinAge	Derived variable - Working age	Demographic information
DvWkingHh	Derived variable - Household members of working age (i.e. aged 16-19 not in FT education or 19 to pension age) in paid work, either full-time or part-time	Demographic information
Dvwlkmvday	Derived variable - Walking as moderate activity in last 7 days, number of days [SamplePopHlthWeight]	Physical activity
Dvwlkmvmw	Derived variable - Minutes walking per week qualifying as moderate activity [SamplePopHlthWeight]	Physical activity
Dvwtkg	Derived variable - Weight : in kg - computed from Stones/pounds if necessary [SamplePopHlthWeight]	BMI

Annex J – National Survey weights

Table J.1: Weights provided for the “All people file”

Variable name	Variable label	Explanation for when to use the variable
WalesPopWeight	Weight to represent the total population of Wales (all ages)	Enumerated individual weight, used to scale up individuals of all ages living in responding households to ensure the sample represents the population profile of all individuals in Wales (3,072,964 using ONS 2014-based population estimates for 2017).
SamplePopWeight	Weight to make sample population reflect all-Wales characteristics	This weight ensures that the weighted base matches the un-weighted base
WalesHhWeight	Weight to represent all households in Wales	Household weight, which is used to scale up responding households to represent the total number of households in Wales (1,349,911 using ONS 2014-based population estimates for 2017).
SampleHhWeight	Weight to make sample reflect the characteristics of all households in Wales	This weight ensures that the weighted base matches the un-weighted base.

Table J.2: Weights provided for the “Respondent file”

Variable name	Variable label	Explanation for when to use the variable
WalesHhWeight	Weight to represent all households in Wales	Household weight, which is used to scale up responding households to represent the total number of households in Wales (1,349,911 using ONS 2014-based population estimates for 2017).
SampleHhWeight	Weight to make sample reflect the characteristics of all households in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesAdultWeight	Weight to represent all adults (16+) in Wales	Enumerated individual weight, used to scale up responding individuals to represent the population of adults aged 16 and older in Wales (2,514,523 using ONS 2014-based population estimates for 2017).
SampleAdultWeight	Weight to make sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesChildWeight	Weight to represent all children 1-5 in Wales	Enumerated individual weight assigned to individuals with dependent children responding to sub-sampled modules on ‘Screen time’, ‘Diet’ and ‘Physical Activity’ of the relevant child (174,916 using ONS 2014-based population estimates for 2017). The weight allows the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.

Variable name	Variable label	Explanation for when to use the variable
SampleChildWeight	Weight to make sample reflect the characteristics of all children 1-5 in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesPlayWeight	Weight to make the sample of children reflect the characteristics of all children 1-5 in Wales	This weight ensures that the weighted base matches the un-weighted base.
SamplePlayWeight	Weight to make the Play sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesGPWeight	Weight to make the GP sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'GP' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleGPWeight	Weight to make the GP sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.

Variable name	Variable label	Explanation for when to use the variable
WalesPopHlthWeight	Weight to make the Population health lifestyle sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled '– Population health lifestyle' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SamplePopHlthWeight	Weight to make the Population health lifestyle sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesSatWGWeight	Weight to make the Satisfaction with WG sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Satisfaction with WG' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleSatWGWeight	Weight to make the Satisfaction with WG sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesSatEduWeight	Weight to make the Satisfaction with Education sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Satisfaction with Education' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.

Variable name	Variable label	Explanation for when to use the variable
SampleSatEduWeight	Weight to make the Satisfaction with Education sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesSatHlthWeight	Weight to make the Satisfaction with Health services sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Satisfaction with Health services' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleSatHlthWeight	Weight to make the Satisfaction with Health services sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesTaxWeight	Weight to make the Tax sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Tax' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleTaxWeight	Weight to make the Tax sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.

Variable name	Variable label	Explanation for when to use the variable
WalesNRWWeight	Weight to make the NRW sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'NRW' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleNRWWeight	Weight to make the NRW sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesNRW2Weight	Weight to make the Climate change sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Climate change' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleNRW2Weight	Weight to make the Climate change sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesNRWChildWeight	Weight to represent all children (0-16) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'NRW Child' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.

Variable name	Variable label	Explanation for when to use the variable
SampleNRWChildWeight	Weight to make the NRWChild sample of children reflect the characteristics of all children 0-16 in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesACWWeight	Weight to make the ACW sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'ACW' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleACWWeight	Weight to make the ACW sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesShopRecWeight	Weight to make the Shopping bag sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Shopping bag' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleShopRecWeight	Weight to make the Shopping bag sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.

Variable name	Variable label	Explanation for when to use the variable
WalesMatDepWeight	Weight to make the Household deprivation sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Household deprivation' modules to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleMatDepWeight	Weight to make the Household deprivation sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesPenDepWeight	Weight to make the Pension deprivation sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Active travel' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SamplePenDepWeight	Weight to make the Pension deprivation sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesChldDepWeight	Weight to make the Child deprivation sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Tax devolution' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.

Variable name	Variable label	Explanation for when to use the variable
SampleChldDepWeight	Weight to make the Tax sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.
WalesHospitalWeight	Weight to make the Hospital sub-sample represent all adults (16+) in Wales	Enumerated individual weight assigned to individuals responding to sub-sampled 'Hospital' module to allow the accurate estimation of totals from the responses in this module. This weight accounts for the difference in the probability of selection between the main survey and for the sub-sample.
SampleHospitalWeight	Weight to make the Hospital sub-sample reflect the characteristics of all adults (16+) in Wales	This weight ensures that the weighted base matches the un-weighted base.

Annex K – Outcome code descriptions

Table K.1: Eligible codes

Outcome category	Outcome code	Description
Complete interview	110	Complete interview by required respondent(s) / selected person
Complete interview	120	Complete interview: partly by required respondent(s) / selected person and partly by proxy
Non-contact	310	No contact with anyone at the address
Non-contact	320	Contact made at the address, but not with any member of the sampled dwelling/household
Non-contact	330	Contact made at sampled dwelling/household, but not with any responsible resident
Non-contact	340	Contact made with responsible member of sampled dwelling/household, but not with sampled person
Refusal	410	Office (HQ) refusal
Refusal	422	Information refused that would allow identification of required respondent(s) within dwelling or household. Information refused about persons within household
Refusal	431	Refusal by required respondent / selected person
Refusal	432	Refusal by proxy
Refusal	440	Refusal during interview
Refusal	450	Broken appointment, no re-contact
Other non-response	511	Ill at home during survey period: notified to head office
Other non-response	512	Ill at home during survey period: notified to interviewer
Other non-response	521	Away/ill in hospital throughout the field period: notified to head office
Other non-response	522	Away/ill in hospital throughout the field period: notified to interviewer
Other non-response	531	Physically or mentally unable/incompetent: notified to head office
Other non-response	532	Physically or mentally unable/incompetent: notified to interviewer
Other non-response	542	Language difficulties: notified to interviewer
Other non-response	550	Lost interview

Table K.2: Ineligible codes

Outcome category	Outcome code	Description
	710	Not yet built / under construction
	720	Demolished / derelict
	730	Vacant / empty
	740	Non-residential address
	750	Address occupied, but no resident household/resident(s)
	760	Communal establishment / Institution
	781	Directed not to sample at address

Table K.3: Unknown eligibility codes

Outcome category	Outcome code	Description
	612	Issued but not attempted
	620	Inaccessible
	630	Unable to locate address
	641	Information refused about whether address is residential
	642	Unknown whether address is residential due to non-contact
	651	Information refused about whether there are eligible resident(s)
	652	Unknown whether there are eligible resident(s) due to non-contact

Annex L – Design Effects and Factors

The software used to calculate the normal approximation of the design factors (DEFTs), design effects (DEFFs), and confidence intervals was SAS and Stata.

The DEFT is a ratio of a standard error taking into account the complex survey design relative to a standard error under a simple random sample. The DEFF (= DEFT²) is a ratio of the equivalent variances and can be used to calculate the effective sample size; that is the random sample size that would give estimates of similar precision to the complex survey sample.

Confidence intervals provide an upper and lower boundary of an estimate indicating the extent to which an estimate may differ from a true value. The larger the difference between the upper and lower boundary, the less precise is the estimate. A confidence interval at a 95% confidence level means that if we were to repeat the survey 100 times, we would expect the confidence interval to contain the true value in 95 of those 100 instances.¹

The standard errors and DEFTs were calculated by using an in-house macro, which allows for estimation of standard errors for means and proportions under complex designs. The macro uses the linearised Jackknife method estimating the variance of the data provided.

Selected survey variables split by gender

Gender	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Male	Yes	0.63	0.80	87.8	89.3
	No	0.63	0.80	10.7	12.1
Female	Yes	0.73	0.85	85.0	86.5
	No	0.73	0.85	13.5	15.0

¹ Office for National Statistics, Methodology: Migration Statistics Quarterly Report – information for users, section 2. Interpreting confidence intervals for migration estimates, <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/methodologies/migrationstatisticsquarterlyreportinformationforusers#interpreting-confidence-intervals-for-migration-estimates>

WelSpk**Speak Welsh**

Gender	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Male	Yes	1.43	1.20	15.4	17.8
	No	1.47	1.21	68.9	71.8
	No, but have some Welsh speaking ability	1.66	1.29	11.9	14.2
Female	Yes	1.45	1.20	18.5	20.7
	No	1.38	1.17	63.0	65.7
	No, but have some Welsh speaking ability	1.51	1.23	14.9	17.1

DvSmokec**Derived variable – Currently smoking either daily or occasionally**

Gender	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Male	Yes	1.54	1.24	16.0	19.6
	No	1.53	1.24	80.2	83.8
Female	Yes	1.41	1.19	15.1	18.0
	No	1.41	1.19	81.9	84.9

Dvalcushibi**Derived variable - Usual weekly consumption binary - Higher risk, drinking above guidelines (>14 units)**

Gender	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Male	Yes	1.46	1.21	24.1	28.2
	No	1.46	1.21	69.8	74.0
Female	Yes	1.27	1.13	9.9	12.4
	No	1.24	1.11	86.0	88.6

Dvmvpa150**Derived variable – MVPA meets guidelines 150 minutes weekly**

Gender	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Male	Yes	1.40	1.18	54.2	58.7
	No	1.40	1.18	41.2	45.7
Female	Yes	1.40	1.18	50.6	54.7
	No	1.40	1.18	45.3	49.3

Selected survey variables split by age groups**IntPersUse****Personal use of internet at home, work or elsewhere**

Age group	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
16-24 years	Yes	1.01	1.00	98.8	100.0
	No	1.01	1.00	0.0	1.2
25-44 years	Yes	1.13	1.06	97.2	98.4
	No	1.13	1.06	1.6	2.8
45-64 years	Yes	1.16	1.08	90.4	92.3
	No	1.16	1.08	7.7	9.6
65-74 years	Yes	1.22	1.10	73.6	77.4
	No	1.22	1.10	22.5	26.3
75+ years	Yes	1.26	1.12	42.9	48.0
	No	1.26	1.12	52.0	57.1

WelSpk**Speak Welsh**

Age group	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
16-24 years	Yes	1.15	1.07	21.9	28.9
	No	1.21	1.10	50.6	58.8
	No, but have some Welsh speaking ability	1.27	1.13	16.4	23.2
25-44 years	Yes	1.30	1.14	15.8	18.9
	No	1.27	1.13	65.4	69.2
	No, but have some Welsh speaking ability	1.27	1.13	13.8	16.8
45-64 years	Yes	1.33	1.15	15.1	17.7
	No	1.28	1.13	67.5	70.7
	No, but have some Welsh speaking ability	1.31	1.14	13.2	15.7
65-74 years	Yes	1.31	1.15	14.4	17.7
	No	1.27	1.13	69.7	73.7
	No, but have some Welsh speaking ability	1.25	1.12	10.7	13.7
75+ years	Yes	1.37	1.17	17.3	21.5
	No	1.33	1.15	68.6	73.3
	No, but have some Welsh speaking ability	1.30	1.14	8.2	11.2

DvSmokec **Derived variable – Currently smoking either daily or occasionally**

Age group	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
16-24 years	Yes	1.21	1.10	13.1	21.9
	No	1.21	1.10	78.1	86.9
25-44 years	Yes	1.29	1.13	19.4	24.1
	No	1.28	1.13	75.9	80.6
45-64 years	Yes	1.25	1.12	16.4	20.2
	No	1.25	1.12	79.7	83.5
65-74 years	Yes	1.27	1.13	11.0	15.3
	No	1.27	1.13	84.3	88.6
75+ years	Yes	1.03	1.02	3.5	6.5
	No	1.07	1.03	93.3	96.3

Dvalcushibi**Derived variable - Usual weekly consumption binary - Higher risk, drinking above guidelines (>14 units)**

Age group	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
16-24 years	Yes	1.54	1.24	10.4	19.5
	No	1.45	1.20	78.3	87.6
25-44 years	Yes	1.32	1.15	14.6	18.9
	No	1.28	1.13	79.2	83.7
45-64 years	Yes	1.30	1.14	20.4	24.6
	No	1.29	1.14	73.8	78.0
65-74 years	Yes	1.23	1.11	18.2	23.3
	No	1.23	1.11	74.4	79.7
75+ years	Yes	1.32	1.15	8.7	13.5
	No	1.32	1.15	85.5	90.4

Dvmvpa150**Derived variable – MVPA meets guidelines 150 minutes weekly**

Age group	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
16-24 years	Yes	1.23	1.11	55.6	67.1
	No	1.23	1.11	32.9	44.4
25-44 years	Yes	1.30	1.14	55.0	60.7
	No	1.30	1.14	39.3	44.9
45-64 years	Yes	1.31	1.14	49.5	54.5
	No	1.31	1.14	45.5	50.5
65-74 years	Yes	1.25	1.12	45.4	51.8
	No	1.25	1.12	47.9	54.3
75+ years	Yes	1.21	1.10	21.2	27.4
	No	1.22	1.10	72.4	78.6

Selected survey variables split by economic status

IntPersUse Personal use of internet at home, work or elsewhere

Economic status	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
In employment	Yes	0.90	0.95	96.1	97.1
	No	0.91	0.95	2.9	3.9
Unemployed	Yes	0.61	0.78	89.7	95.2
	No	0.61	0.78	4.8	10.3
Economically inactive	Yes	0.94	0.97	74.5	76.7
	No	0.94	0.97	23.3	25.5

WelSpk Speak Welsh

Economic status	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
In employment	Yes	1.36	1.16	18.2	20.6
	No	1.32	1.15	62.8	65.7
	No, but have some Welsh speaking ability	1.43	1.20	15.1	17.4
Unemployed	Yes	1.24	1.11	3.2	10.2
	No	1.10	1.05	80.4	89.8
	No, but have some Welsh speaking ability	0.92	0.96	4.9	11.6
Economically inactive	Yes	1.50	1.22	16.1	18.4
	No	1.49	1.22	68.3	71.1
	No, but have some Welsh speaking ability	1.69	1.30	11.9	14.1

Selected survey variables split by local authority

IntPersUse Personal use of internet at home, work or elsewhere

Local authority	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Isle of Anglesey	Yes	0.98	0.99	81.8	89.7
	No	0.98	0.99	10.3	18.2
Gwynedd	Yes	1.00	1.00	80.4	88.5
	No	1.00	1.00	11.3	19.3
Conwy	Yes	0.78	0.88	84.4	90.5
	No	0.78	0.88	9.5	15.6
Denbighshire	Yes	0.87	0.93	86.2	92.4
	No	0.87	0.93	7.6	13.8
Flintshire	Yes	0.74	0.86	85.1	90.4
	No	0.74	0.86	9.6	14.9
Wrexham	Yes	0.93	0.96	80.2	87.5
	No	0.93	0.96	12.5	19.8
Powys	Yes	0.96	0.98	81.4	85.4
	No	0.96	0.98	14.6	18.6
Ceredigion	Yes	0.83	0.91	83.5	90.4
	No	0.83	0.91	9.6	16.5
Pembrokeshire	Yes	0.84	0.92	84.3	90.3
	No	0.84	0.92	9.7	15.7
Carmarthenshire	Yes	0.85	0.92	84.3	89.5
	No	0.85	0.92	10.4	15.6
Swansea	Yes	0.82	0.90	83.4	88.1
	No	0.82	0.90	11.9	16.6
Neath Port Talbot	Yes	0.93	0.97	76.7	84.0
	No	0.93	0.97	16.0	23.3
Bridgend	Yes	0.90	0.95	80.7	87.6
	No	0.90	0.95	12.4	19.3

Local authority	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Vale of Glamorgan	Yes	0.86	0.93	88.8	93.8
	No	0.86	0.93	6.2	11.2
Cardiff	Yes	0.71	0.84	91.2	94.1
	No	0.71	0.84	5.9	8.8
Rhondda Cynon Taf	Yes	0.78	0.88	84.3	88.9
	No	0.78	0.88	11.1	15.7
Merthyr Tydfil	Yes	0.89	0.95	79.7	87.7
	No	0.89	0.95	12.3	20.3
Caerphilly	Yes	0.86	0.93	83.5	89.0
	No	0.86	0.93	11.0	16.5
Blaenau Gwent	Yes	0.84	0.92	78.8	86.0
	No	0.84	0.92	14.0	21.2
Torfaen	Yes	0.67	0.82	87.6	92.7
	No	0.67	0.82	7.3	12.4
Monmouthshire	Yes	0.76	0.87	90.0	94.3
	No	0.76	0.87	5.7	10.0
Newport	Yes	1.00	1.00	87.4	92.8
	No	1.00	1.00	7.2	12.6

WelSpk**Speak Welsh**

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Isle of Anglesey	Yes	1.31	1.14	46.6	59.3
	No	1.23	1.11	27.1	38.8
	No, but have some Welsh speaking ability	1.10	1.05	10.0	18.2
Gwynedd	Yes	1.25	1.12	60.3	71.6
	No	1.13	1.06	16.5	26.0
	No, but have some Welsh speaking ability	1.32	1.15	8.8	16.8
Conwy	Yes	1.53	1.24	31.1	42.6
	No	1.33	1.15	44.1	55.4
	No, but have some Welsh speaking ability	1.18	1.09	9.8	17.0
Denbighshire	Yes	1.50	1.22	24.2	35.8
	No	1.44	1.20	51.9	64.2
	No, but have some Welsh speaking ability	1.69	1.30	7.7	16.3
Flintshire	Yes	1.42	1.19	7.5	14.0
	No	1.37	1.17	70.2	79.3
	No, but have some Welsh speaking ability	1.37	1.17	10.8	18.2
Wrexham	Yes	1.30	1.14	9.8	17.5
	No	1.39	1.18	67.7	77.9
	No, but have some Welsh speaking ability	1.52	1.23	9.5	17.6
Powys	Yes	1.34	1.16	16.1	20.7
	No	1.31	1.14	63.2	68.8
	No, but have some Welsh speaking ability	1.33	1.15	13.4	17.8
Ceredigion	Yes	1.35	1.16	35.9	48.1
	No	1.47	1.21	33.5	46.0
	No, but have some Welsh speaking ability	1.28	1.13	13.6	22.9

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Pembrokeshire	Yes	1.72	1.31	14.9	24.2
	No	1.49	1.22	63.4	73.9
	No, but have some Welsh speaking ability	1.33	1.15	8.3	15.3
Carmarthenshire	Yes	1.41	1.19	33.3	42.4
	No	1.38	1.17	36.4	45.4
	No, but have some Welsh speaking ability	1.55	1.25	17.0	24.9
Swansea	Yes	1.16	1.08	6.8	11.3
	No	1.40	1.18	64.2	71.9
	No, but have some Welsh speaking ability	1.45	1.20	19.1	26.1
Neath Port Talbot	Yes	1.31	1.15	11.8	19.3
	No	1.31	1.14	66.0	75.5
	No, but have some Welsh speaking ability	1.36	1.17	10.1	17.3
Bridgend	Yes	1.18	1.09	8.6	15.2
	No	1.25	1.12	70.5	79.6
	No, but have some Welsh speaking ability	1.29	1.14	9.4	16.7
Vale of Glamorgan	Yes	1.13	1.07	5.5	10.8
	No	1.28	1.13	80.6	88.0
	No, but have some Welsh speaking ability	1.47	1.21	4.7	10.4
Cardiff	Yes	1.33	1.16	7.5	11.7
	No	1.42	1.19	73.9	79.9
	No, but have some Welsh speaking ability	1.48	1.22	11.0	16.0
Rhondda Cynon Taf	Yes	1.78	1.34	12.2	18.8
	No	1.49	1.22	67.7	75.3
	No, but have some Welsh speaking ability	1.30	1.14	10.3	15.7
Merthyr Tydfil	Yes	1.42	1.19	7.1	15.2
	No	1.49	1.22	76.2	86.5
	No, but have some Welsh speaking ability	1.69	1.30	3.8	11.1

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Caerphilly	Yes	1.74	1.32	6.6	12.4
	No	1.63	1.28	66.3	75.3
	No, but have some Welsh speaking ability	1.68	1.29	15.7	23.7
Blaenau Gwent	Yes	1.69	1.30	5.5	12.4
	No	1.79	1.34	81.5	90.2
	No, but have some Welsh speaking ability	2.08	1.44	2.2	8.2
Torfaen	Yes	1.91	1.38	3.3	9.3
	No	1.81	1.35	72.2	82.6
	No, but have some Welsh speaking ability	1.88	1.37	11.4	20.6
Monmouthshire	Yes	1.50	1.23	3.4	8.3
	No	1.81	1.35	79.8	88.1
	No, but have some Welsh speaking ability	2.06	1.44	6.6	13.8
Newport	Yes	1.45	1.20	0.9	4.3
	No	1.60	1.27	78.8	86.8
	No, but have some Welsh speaking ability	1.65	1.28	10.8	18.3

DvSmokec**Derived variable – Currently smoking either daily or occasionally**

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Isle of Anglesey	Yes	1.11	1.05	9.5	23.2
	No	1.18	1.09	74.8	89.4
Gwynedd	Yes	0.90	0.95	4.9	15.8
	No	0.88	0.94	82.3	94.0
Conwy	Yes	1.73	1.32	12.7	28.8
	No	1.73	1.32	71.2	87.3
Denbighshire	Yes	1.03	1.02	5.8	16.5
	No	1.03	1.02	83.5	94.2
Flintshire	Yes	1.10	1.05	9.9	21.1
	No	1.10	1.05	78.9	90.1
Wrexham	Yes	1.43	1.20	10.8	25.1
	No	1.43	1.20	74.9	89.2
Powys	Yes	1.22	1.10	11.2	16.3
	No	1.22	1.10	83.7	88.8
Ceredigion	Yes	1.11	1.05	10.0	20.8
	No	1.11	1.05	79.2	90.0
Pembrokeshire	Yes	1.38	1.17	12.4	23.1
	No	1.38	1.17	76.9	87.6
Carmarthenshire	Yes	1.54	1.24	12.9	22.5
	No	1.54	1.24	77.5	87.1
Swansea	Yes	1.29	1.14	13.0	21.1
	No	1.29	1.14	78.7	86.9
Neath Port Talbot	Yes	1.19	1.09	11.2	21.5
	No	1.19	1.09	78.5	88.8
Bridgend	Yes	1.32	1.15	12.3	23.7
	No	1.32	1.15	76.3	87.7

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Vale of Glamorgan	Yes	1.37	1.17	10.3	20.2
	No	1.37	1.17	79.8	89.7
Cardiff	Yes	1.53	1.24	13.4	20.8
	No	1.52	1.24	79.2	86.5
Rhondda Cynon Taf	Yes	1.24	1.11	16.1	23.4
	No	1.24	1.11	76.6	83.9
Merthyr Tydfil	Yes	1.19	1.09	16.4	27.5
	No	1.19	1.09	72.5	83.6
Caerphilly	Yes	1.62	1.28	11.7	23.4
	No	1.62	1.28	76.6	88.3
Blaenau Gwent	Yes	1.13	1.07	11.3	24.5
	No	1.13	1.07	75.5	88.7
Torfaen	Yes	2.25	1.50	8.1	24.9
	No	2.25	1.50	75.1	91.9
Monmouthshire	Yes	1.51	1.23	10.5	23.5
	No	1.51	1.23	76.5	89.5
Newport	Yes	1.46	1.21	12.6	25.8
	No	1.43	1.20	73.5	86.8

Dvalcushibi **Derived variable - Usual weekly consumption binary - Higher risk, drinking above guidelines (>14 units)**

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Isle of Anglesey	Yes	1.11	1.06	5.7	17.1
	No	1.34	1.16	74.1	89.2
Gwynedd	Yes	1.77	1.33	11.9	32.2
	No	1.77	1.33	67.8	88.1
Conwy	Yes	1.24	1.11	7.9	19.6
	No	1.27	1.13	79.2	91.4
Denbighshire	Yes	1.12	1.06	3.6	14.3
	No	1.12	1.06	85.7	96.4
Flintshire	Yes	1.48	1.22	13.2	27.3
	No	1.48	1.22	72.7	86.8
Wrexham	Yes	1.10	1.05	10.0	22.8
	No	1.09	1.04	76.9	89.7
Powys	Yes	1.29	1.13	16.8	23.0
	No	1.27	1.13	74.8	81.1
Ceredigion	Yes	1.68	1.30	13.4	27.8
	No	1.68	1.30	72.2	86.6
Pembrokeshire	Yes	1.20	1.10	13.0	23.5
	No	1.23	1.11	70.7	82.3
Carmarthenshire	Yes	1.34	1.16	15.2	24.8
	No	1.33	1.15	74.6	84.3
Swansea	Yes	1.60	1.26	19.6	30.2
	No	1.58	1.26	68.2	79.0
Neath Port Talbot	Yes	1.68	1.30	11.8	24.1
	No	1.68	1.30	75.9	88.2

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Bridgend	Yes	1.02	1.01	6.2	14.6
	No	1.02	1.01	85.4	93.8
Vale of Glamorgan	Yes	1.09	1.04	21.8	33.6
	No	1.11	1.05	64.0	76.1
Cardiff	Yes	1.42	1.19	15.5	23.1
	No	1.41	1.19	76.7	84.3
Rhondda Cynon Taf	Yes	1.32	1.15	14.0	21.2
	No	1.30	1.14	77.8	85.1
Merthyr Tydfil	Yes	1.35	1.16	8.7	18.5
	No	1.30	1.14	76.4	87.2
Caerphilly	Yes	1.21	1.10	12.1	22.8
	No	1.22	1.10	73.2	84.6
Blaenau Gwent	Yes	1.17	1.08	10.5	23.9
	No	1.21	1.10	72.8	87.1
Torfaen	Yes	1.38	1.17	9.5	23.4
	No	1.38	1.18	70.5	86.2
Monmouthshire	Yes	1.33	1.16	12.8	26.3
	No	1.39	1.18	68.5	83.1
Newport	Yes	1.12	1.06	7.3	17.2
	No	1.32	1.15	74.1	87.3

Dvmvpa150**Derived variable – MVPA meets guidelines 150 minutes weekly**

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Isle of Anglesey	Yes	1.23	1.11	41.7	61.0
	No	1.23	1.11	39.0	58.3
Gwynedd	Yes	1.38	1.17	40.7	62.5
	No	1.39	1.18	35.9	57.8
Conwy	Yes	1.23	1.11	48.9	66.3
	No	1.23	1.11	33.7	51.1
Denbighshire	Yes	1.25	1.12	29.9	49.0
	No	1.25	1.12	51.0	70.1
Flintshire	Yes	1.26	1.12	51.2	67.4
	No	1.26	1.12	32.6	48.8
Wrexham	Yes	1.24	1.11	47.5	65.4
	No	1.24	1.11	34.6	52.5
Powys	Yes	1.23	1.11	53.0	60.5
	No	1.23	1.11	39.5	47.0
Ceredigion	Yes	1.34	1.16	52.4	68.5
	No	1.34	1.16	31.5	47.6
Pembrokeshire	Yes	1.24	1.11	42.1	55.9
	No	1.24	1.11	44.1	57.9
Carmarthenshire	Yes	1.39	1.18	45.2	57.5
	No	1.39	1.18	42.5	54.8
Swansea	Yes	1.42	1.19	49.0	60.5
	No	1.42	1.19	39.4	50.8

Local authority	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Neath Port Talbot	Yes	1.37	1.17	35.4	50.1
	No	1.37	1.17	49.9	64.6
Bridgend	Yes	1.34	1.16	24.4	38.6
	No	1.34	1.16	61.4	75.6
Vale of Glamorgan	Yes	1.19	1.09	49.4	62.9
	No	1.19	1.09	37.1	50.6
Cardiff	Yes	1.28	1.13	57.3	66.2
	No	1.28	1.13	33.7	42.7
Rhondda Cynon Taf	Yes	1.38	1.17	36.6	46.1
	No	1.38	1.17	53.9	63.4
Merthyr Tydfil	Yes	1.36	1.17	28.2	42.0
	No	1.36	1.17	58.0	71.8
Caerphilly	Yes	1.32	1.15	54.4	68.7
	No	1.32	1.15	31.3	45.6
Blaenau Gwent	Yes	1.27	1.13	37.7	55.7
	No	1.27	1.13	44.3	62.3
Torfaen	Yes	1.34	1.16	50.3	68.9
	No	1.34	1.16	31.1	49.7
Monmouthshire	Yes	1.30	1.14	50.3	66.7
	No	1.30	1.14	33.3	49.7
Newport	Yes	1.42	1.19	42.7	59.5
	No	1.42	1.19	39.9	56.7

Selected survey variables split by household material deprivation

IntPersUse Personal use of internet at home, work or elsewhere

Household material deprivation	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Yes	Yes	1.01	1.00	84.4	87.8
	No	1.01	1.00	12.2	15.6
No	Yes	0.67	0.82	86.8	87.9
	No	0.67	0.82	12.1	13.2

WelSpk Speak Welsh

Household material deprivation	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Yes	Yes	1.51	1.23	12.3	16.4
	No	1.46	1.21	69.9	75.0
	No, but have some Welsh speaking ability	1.45	1.20	11.2	15.0
No	Yes	1.34	1.16	17.9	19.6
	No	1.36	1.17	65.3	67.5
	No, but have some Welsh speaking ability	1.58	1.26	14.0	15.7

Selected survey variables split by local health board

DvSmokec Derived variable – Currently smoking either daily or occasionally

Local health board	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Betsi Cadwaladr University Health Board	Yes	1.29	1.14	12.8	18.3
	No	1.29	1.14	81.3	86.8
Powys Teaching Health Board	Yes	1.22	1.10	11.2	16.3
	No	1.22	1.10	83.7	88.8
Hywel Dda University Health Board	Yes	1.45	1.20	14.2	20.4
	No	1.45	1.20	79.6	85.8
Abertawe Bro Morgannwg University Health Board	Yes	1.27	1.13	14.3	19.9
	No	1.27	1.13	80.0	85.6
Cwm Taf University Health Board	Yes	1.28	1.13	17.1	23.3
	No	1.28	1.13	76.7	82.9
Aneurin Bevan University Health Board	Yes	1.68	1.30	14.7	20.9
	No	1.67	1.29	79.0	85.2
Cardiff and Vale University Health Board	Yes	1.52	1.23	13.6	19.6
	No	1.51	1.23	80.3	86.3

Dvalcushibi **Derived variable - Usual weekly consumption binary - Higher risk, drinking above guidelines (>14 units)**

Local health board	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Betsi Cadwaladr University Health Board	Yes	1.47	1.21	13.2	19.1
	No	1.46	1.21	79.9	85.9
Powys Teaching Health Board	Yes	1.29	1.13	16.8	23.0
	No	1.27	1.13	74.8	81.1
Hywel Dda University Health Board	Yes	1.37	1.17	16.3	22.8
	No	1.37	1.17	75.2	81.8
Abertawe Bro Morgannwg University Health Board	Yes	1.48	1.22	16.0	22.3
	No	1.47	1.21	76.9	83.4
Cwm Taf University Health Board	Yes	1.39	1.18	13.8	19.8
	No	1.36	1.16	78.4	84.6
Aneurin Bevan University Health Board	Yes	1.27	1.13	13.6	19.0
	No	1.34	1.16	75.8	82.0
Cardiff and Vale University Health Board	Yes	1.30	1.14	18.3	24.7
	No	1.29	1.14	74.6	81.0

Dvmvpa150**Derived variable – MVPA meets guidelines 150 minutes weekly**

Local health board	Response	Design effect	Design factor	95 % Confidence interval	
				Lower %	Upper %
Betsi Cadwaladr University Health Board	Yes	1.33	1.15	49.8	57.5
	No	1.33	1.15	42.3	50.0
Powys Teaching Health Board	Yes	1.23	1.11	53.0	60.5
	No	1.23	1.11	39.5	47.0
Hywel Dda University Health Board	Yes	1.36	1.16	48.3	56.4
	No	1.36	1.16	43.6	51.7
Abertawe Bro Morgannwg University Health Board	Yes	1.38	1.17	41.5	49.2
	No	1.38	1.17	50.7	58.4
Cwm Taf University Health Board	Yes	1.44	1.20	36.0	44.1
	No	1.44	1.20	55.9	64.0
Aneurin Bevan University Health Board	Yes	1.41	1.19	52.6	60.3
	No	1.41	1.19	39.5	47.2
Cardiff and Vale University Health Board	Yes	1.27	1.13	56.5	64.1
	No	1.27	1.13	35.9	43.4

Selected survey variables split by the Welsh Index of Multiple Deprivation

Dvsmokec Derived variable - Currently smoke either daily or occasionally

Welsh index of multiple deprivation	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Most deprived 20%	Yes	1.31	1.14	19.4	25.2
	No	1.30	1.14	74.6	80.4
Q2	Yes	1.24	1.11	17.6	22.8
	No	1.24	1.11	76.9	82.2
Q3	Yes	1.46	1.21	17.0	22.2
	No	1.46	1.21	77.8	83.0
Q4	Yes	1.90	1.38	10.8	15.5
	No	1.90	1.38	84.3	89.1
Least deprived 20%	Yes	1.91	1.38	8.8	13.6
	No	1.91	1.38	86.4	91.2

Dvalcushibi Derived variable - Usual weekly consumption binary - Higher risk, drinking above guidelines (>14 units)

Welsh index of multiple deprivation	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Most deprived 20%	Yes	1.41	1.19	11.8	16.8
	No	1.36	1.17	81.8	87.0
Q2	Yes	1.28	1.13	13.5	18.4
	No	1.31	1.14	79.0	84.3
Q3	Yes	1.60	1.27	17.1	22.7
	No	1.56	1.25	75.0	80.8
Q4	Yes	1.76	1.33	16.5	21.8
	No	1.71	1.31	76.5	81.9
Least deprived 20%	Yes	1.37	1.17	19.3	25.0
	No	1.36	1.17	73.8	79.6

Dvmvpa150**Derived variable - MVPA meets guidelines 150 minutes weekly**

Welsh index of multiple deprivation	Response	Design effect	Design factor	95 % Confidence Interval	
				Lower %	Upper %
Most deprived 20%	Yes	1.46	1.21	39.2	46.4
	No	1.46	1.21	53.4	60.6
Q2	Yes	1.41	1.19	44.0	51.0
	No	1.41	1.19	48.7	55.7
Q3	Yes	1.50	1.22	48.0	54.9
	No	1.50	1.22	45.1	52.0
Q4	Yes	1.63	1.28	51.9	58.5
	No	1.63	1.28	41.5	48.1
Least deprived 20%	Yes	1.29	1.13	57.3	63.8
	No	1.29	1.13	36.2	42.7