

NIHCS BACKGROUND QUALITY REPORT

Introduction

This background quality report provides users of the Northern Ireland House Condition Survey (NIHCS) with information relating to the quality of the statistical outputs produced.

Background to the NIHCS

The NIHCS meets the Housing Executive's statutory responsibility under the 1981 Housing Order to '*regularly examine housing conditions and need*'. The Housing Executive carried out the first Northern Ireland House Condition Survey in 1974. This survey had two principal inter-related objectives: firstly, "to provide a wide range of technical and economic information on the structural condition of dwellings, their amenities, tenure and other characteristics" and secondly, to provide information to enable comparisons to be made between housing conditions in Northern Ireland and Great Britain. Subsequent House Condition Surveys undertaken by the Housing Executive have both broadened the aims of the survey and the wealth of information that is now gathered, but these two original objectives still lie at the heart of each of the subsequent surveys.

House Condition Surveys typically take place approximately every five years, although on occasion there have been interim surveys. The thirteenth NIHCS was originally timetabled to be carried out in 2021, but due to the health and safety risks associated with conducting in-person surveys during covid-19, and the potential impact on response rates and data quality, it was postponed until 2023.

1. Relevance

The degree to which the statistical product meets user needs in both coverage and content.

NIHCS data are used by government departments, government agencies, the voluntary sector, charities and many private sector interests. The Housing Executive keeps records of data requests in order to identify users and uses of NIHCS data.

The Housing Executive set up a user engagement group to enhance the value of the NIHCS. The user group brings users of the NIHCS together to exchange information and views, and to ensure the survey and analysis meet users' needs. The group consists of representatives from: National Energy Action, Rural Community Network, Department for Infrastructure, Department of

Finance, Department for Communities, Northern Ireland Federation of Housing Associations and the Housing Executive.

The role of the User Engagement Group is to:

- provide feedback on the questionnaire
- discuss any changes to methodology
- ensure the statistics produced meet the users' needs
- examine potential uses for the statistics in the future
- discuss policy changes which may impact on the survey

The Housing Executive's NIHCS team consults with the NIHCS User Engagement Group at various stages of the NIHCS process. This enables the NIHCS team to update users on any relevant information and to get feedback from users which will help to ensure that NIHCS statistics meet users' needs. In 2020/21 the user engagement group was consulted about the issues relating to carrying out the survey during the pandemic and about the impact of a postponement. During the consultation users highlighted a need for some updated statistics in the interim. In response, the Housing Executive produced modelled fuel poverty and energy consumption statistics using 2016 data as a baseline.

Prior to the 2023 NIHCS taking place, a user consultation process was also carried out in relation to the questionnaire. The aim of the consultation was to ensure that the questions asked would meet the needs of users. This consultation had to take into account the need for comparability over time, and the fact that a large proportion of the technical questions cannot be changed/removed because they are necessary for modelling. However, users had an opportunity (particularly in the social survey section), to add new questions which had become relevant since the previous survey e.g. quantities of heating oil purchased.

NIHCS COVERAGE

The level of reporting is dependent on the size of the sample (which is determined by the available budget and the capacity of surveyors). Statistics are produced at Northern Ireland level, and if the sample size allows, local government district (LGD) level figures are also produced. Feedback has shown that many users would find it useful to have statistics available at geographies below Northern Ireland level. However, if the sample size is not of an adequate size to produce statistics at smaller geographical levels, the Housing Executive will explore alternatives to help meet the needs of users e.g. modelled data. The Housing Executive ensures that users fully understand the reasons behind decisions relating to reporting at geographies below Northern Ireland. This is

done through user engagement, and through responses to individual requests for statistics.

In 2016 the sample size was 3000 and the majority of statistics were published at NI level. For a limited number of statistics it was possible to publish at LGD level. The 2023 sample size was initially 7,000 and the aim was to publish more LGD level statistics. However, unlike previous years, most surveyors could only work part-time on the survey which reduced the number of surveys that could be completed within the fieldwork period¹. The sample size was therefore reduced to 4,995. Even with this reduction, by the end of the fieldwork period there were 832 addresses which surveyors had not been able to visit due to time constraints. Surveyors also reported difficulties making contact with householders and a reluctance among householders to take part in the survey. This is not unique to the NIHCS, in recent years there has been a general decline in response rates to surveys. The combination of these issues resulted in a lower response rate than usual for the NIHCS, at 38% (67% in 2016).

The lower response rate means that in general, the 2023 NIHCS statistics will be published at NI level. If it is possible to publish any statistics at LGD level this will be done. Where this isn't possible, it may be an option to complete a modelling exercise for some key statistics required by users, if budget is available.

NIHCS CONTENT

The NIHCS provides data for all tenures and types of housing. The preliminary report provides statistics relating to dwelling stock and unfitness at a national level. The thematic reports provide statistics relating to dwelling stock, household profiles, state of repair, and the housing health and safety rating system. The NIHCS is the only source of data for key government measures of housing quality such as the decent homes standard, fitness standards, fuel poverty, and energy efficiency.

NIHCS statistics are utilised by a range of users. Some examples of how the 2016 statistics were used are provided below:

- District Housing Plans (Housing Executive)
- The Annual Review of the Housing Market (Housing Executive)
- The annual Home Energy Conservation Progress Report (Housing Executive)

¹ In previous years we were able to implement an agreement with employers to release surveyors from their permanent post for the duration of the fieldwork. It was not possible to implement this agreement in 2023 and efforts to find a solution were ultimately unsuccessful.

- The Net Stock Model which informs the Social Housing Development Plan (Housing Executive)
- The measurement of Statutory Unfitness, Fuel Poverty, Decent Homes, the Housing Health and Safety Rating and energy efficiency (SAP and EER) (DfC)
- Housing statistics publication (DfC)
- Strategy for the private rented sector (DfC)
- Children and Young People's Strategy (OFMDFM)
- Disability Strategy (OFMDFM)
- Multiple Deprivation Measures (DoF)
- Revised housing growth indicators (DfI)
- Regional Development Strategy (DfI)

The Housing Executive will continue to identify new users of the NIHCS and to consult with them about how to meet their needs.

2. Accuracy and Reliability

Accuracy is the proximity between an estimate and the unknown true value.

Reliability is the closeness of early estimates to subsequent estimated values.

Surveys are subject to errors which can reduce the accuracy of a survey estimate. The Housing Executive considers these errors during the design, implementation and interpretation stages of a survey, and takes steps to reduce or correct for the errors.

THE SAMPLE

The NIHCS is a sample survey. As the accuracy of a sample survey is dependent on the quality of the sample, the NIHCS sample is carefully designed to ensure that high quality statistics are produced. As previously mentioned, the size of the NIHCS sample is principally determined by the available budget. The NIHCS has a Steering Group which provides guidance in relation to sample size and sample design, while working within the constraints of the budget. This helps to ensure that the statistics produced both meet the needs of users and are robust.

In 2023 a sample of 4995 dwellings was selected². Exactly 333 addresses were selected for each of the LGDs outside Belfast, and 333 each for North, South, East and West Belfast. In addition, the Causeway Coast and Glens Council area

² Sample size was reduced from 7,000 because in 2023 most surveyors were not able to work full-time on the NIHCS. This in turn reduced the number of surveys that could be completed within the fieldwork period.

was divided into two areas (each with 333 addresses) to increase the opportunity for more detailed information on holiday homes in Northern Ireland. The sample included two elements. The first stage was a resample element, consisting of 1918 properties which were surveyed during the 2016 NIHCS. This will provide longitudinal analysis of changes in housing stock, including tenure. The second stage was a fresh sample of 3077 randomly selected properties taken from the NISRA address register (NAR) which is developed within NISRA and is primarily based on the Land and Property Services (LPS) [Pointer](#) database.

SAMPLING ERROR

Sample surveys involve selecting and surveying units from a population of interest, in order to make estimates about the population. The level to which the estimated results differ from the actual results of the population is known as the sampling error. In the case of the NIHCS, where comparisons are made between Areas, or between Northern Ireland and other parts of the UK, or between results of the current and previous surveys, it is important that potential sample error is calculated, even approximately to determine whether there are real differences. The NIHCS team will only produce statistics at geographies below Northern Ireland if sampling error has been calculated and shows that these statistics will be robust.

For the NIHCS sampling errors are estimated at the 95% confidence level i.e. the results would be replicated nineteen times out of twenty if the survey were repeated.

WEIGHTING AND GROSSING

Weighting and grossing is the process whereby the information gathered by means of a sample survey is translated into figures that reflect the real world. The process has a number of stages reflecting the separate stages of the sampling process and the survey process itself. The weighting and grossing process for the NIHCS involves designing and calculating weights separately for the fresh sample and resample.

The weights applied to the 2023 NIHCS dataset adjusted for:

- Non-response by LGD & tenure
- Splits and mergers
- LGD totals by tenure
- New builds & demolitions
- Sample boost areas (Belfast and Causeway Coast & Glens)

The grossing process controls the survey-based statistics to external totals (Local government district by tenure) in the public and private sector.

Following the weighting and grossing process, the fresh sample and resample files were merged and final adjustments were made to account for:

- Overall social sector operational totals
- Belfast sectors
- Housing Executive and Housing Association operational figures

MEASUREMENT ERROR

Issues with the way data are collected can lead to measurement error. This can be caused by inaccuracies with how an individual surveyor gathers data, or with problems in the questionnaire which can lead to incorrect data being recorded.

The Housing Executive minimises measurement error in the following ways:

- *Intensive training of NIHCS surveyors*

A total of 39 professional surveyors were employed to work on the 2023 NIHCS. Surveyors employed were Environmental Health Officers, chartered surveyors, architects or technical Housing Executive staff.

Six experienced supervisors were appointed. Each supervisor was responsible for advising surveyors and ensuring their work was of a consistent and satisfactory quality.

All new surveyors attended a five-day training session in April 2023. The purpose of the training was to introduce the new surveyors to the technical aspects of the survey form and conventions around recording internal and external faults, treatments, disrepair, by room, by fabric as well as by the services and amenities. Guidance and definitions were set out. In addition, the training included the more complex aspects of the form such as the Housing Health and Safety Rating System (HHSRS) and the energy sections. Surveyors were also given training on the fieldwork tablets, the e-form and the accompanying website.

Surveyors who had previously worked on the NIHCS attended a 2-day refresher course.

The training was conducted by the Building Research Establishment (BRE), Housing Executive Research Staff and by the NIHCS supervisors. Training included test inspections of selected dwellings.

All surveyors also attended a one-day course in May 2023 on the social survey included training on interviewing techniques, vulnerable households / safeguarding and HMOs.

Prior to commencing fieldwork, surveyors were asked to complete two practice surveys of dwellings on their tablet and any problems encountered by the surveyors with the tablet or the website were reviewed.

- *Ongoing monitoring by NIHCS supervisors*
NIHCS supervisors play an important role in reducing measurement error. At the beginning of the survey they accompany surveyors to addresses where they can identify any issues with surveyors collecting the data. They also check and approve every completed survey form before it is sent to BRE. This process can involve talking to surveyors and giving guidance e.g, on more complex building layouts, or views. Supervisors will return the form to the surveyor if they feel it is necessary.
- *Manuals and guidance notes*
Surveyors are provided with detailed manuals which they can refer to throughout the survey. The manual covers every page of the questionnaire and gives examples and explanations for each page. Topics include:
 - Completing the physical survey form
 - Completing the social survey form
 - Important definitions
 - Ages of dwellings and building elements
 - Construction method and non-traditional building
 - The Fitness Standard
 - The Housing Health and Safety Rating System

Throughout the survey process, as surveyors and supervisors identify potential issues which could result in measurement error, surveyors are provided with supervisor guidance notes explaining how to deal with the issues.

- *Ensuring that a minimum of two surveyors work in each area*
This helps to reduce surveyor variability.
- *Tablet and website validation*
Surveyors collect data using a tablet which allows them to enter data directly into a database. As well as saving time the tablet allows surveyors to validate their forms in the field. BRE developed a validation system within the software which:
 - Highlights missing data
 - Checks that data are within range
 - Checks values against other responses on the survey form to highlight inconsistencies and pick up errors

Surveyors complete further validation checks once they upload completed forms to the BRE website.

- *Validation by the Housing Executive and BRE*
The Housing Executive and BRE carry out a series of validation checks once the data has been collected.

BRE

- A BRE analyst reviews the surveys uploaded to ensure that there are no residual error flags on any of the forms. This process may involve communication with the supervisor or surveyor.
- Once all forms are submitted, the data is translated from the collection database into the format required by the Housing Executive for analysis. This involves translating the data into SPSS files with a pre-defined structure. At this point, each variable is checked to ensure that the correct number of cases exist and that the values are as expected.
- The data are then submitted to the Housing Executive.

Housing Executive

- Validation and imputation procedures are completed on key items including: tenure, year of construction, dwelling type and dwelling location, and of household characteristics including age of Household Reference Person (HRP) and employment status.
- A weighting and grossing process is carried out on the data to reflect the separate stages of the sampling process and the survey process itself.
- Work is completed for derived variables such as household type and the bedroom standard.
- There is comprehensive validation carried out on the income variable.

COVERAGE ERROR

Coverage error can occur when the sample does not properly represent the population. Careful sample design, as well as the weighting and grossing process, help to ensure that the NIHCS sample represents the population.

The sample for the NIHCS is drawn from the NISRA address register (NAR) database which is developed within NISRA and is primarily based on the Land and Property Services (LPS) [Pointer](#) database.

Quality assurance of the sample

LPS and NISRA have a number of procedures in place to ensure the quality of the sample which is provided to the Housing Executive. Details of these quality

assurance checks are available in the NIHCS Quality Assurance document which is available on the Housing Executive website: [The Housing Executive - NIHCS Statistics quality information](#)

The Housing Executive carries out further quality assurance checks including:

- Checks on total numbers in sample and in each area
- Looking at the distribution by surveyor

NON-RESPONSE BIAS

Non-response bias is the level to which the responses of those who did not participate in a survey differ from those who did. A high response rate reduces the effects of non-response bias and the Housing Executive takes a number of steps in order to achieve as high a response rate as possible.

- Respondents receive a letter and a leaflet explaining the background to the survey, the importance of their participation, and how their personal information will be kept confidential.
- Surveyors call to each address a minimum of five times in order to make contact with householders.
- Surveyors leave call cards to let householders know they called and advising how they can make contact with the surveyor.
- The Housing Executive operates a telephone helpline so respondents can make an appointment at a time that suits them, confirm the identity of the surveyor who has called at their home, or get more information about the survey.
- The response rate of each surveyor is monitored throughout the survey.

The response rate for the NIHCS has traditionally been high (67% in 2016 and 71% in 2011). In 2023 we were unable to implement an agreement which would enable surveyors to be released from their permanent posts to work full-time on the NIHCS. Therefore, the majority of surveyors worked part-time on the survey alongside their full-time jobs which reduced their availability to carry out surveys. In addition, surveyors experienced difficulties making contact with householders and gaining access to complete the survey. This combination of factors resulted in a lower response rate (38%) despite the steps taken to encourage participation in the survey. Other surveys in Northern Ireland and the rest of the UK have reported similar issues with falling response rates.

Anecdotal evidence suggests the decline is due to a number of factors:

- people are less willing to a surveyor in their home following the pandemic
- people are increasingly busy,

- the number of requests to participate in surveys has led to people feeling 'over-surveyed'
 - security concerns e.g. letting strangers into their house and worries about how their personal information will be used.
- *Correcting for non-response bias*
In the 2023 NIHCS non-response bias was corrected during the weighting and grossing process. An adjustment was made for non-response on the basis of tenure by LGD.
 - *Non-response to individual questions*
Non-response to individual questions can also impact on the quality of data, therefore the Housing Executive has measures in place to minimise non-response in the NIHCS. Validation built into tablets, website validation, and quality assurance checks by supervisors mean that the level of non-response for most key NIHCS variables is very low.

The two NIHCS variables which are likely to have incomplete data relate to sensitive topics i.e. income and religion. Surveyors are trained in interview techniques and encourage respondents to answer the questions by stressing the confidentiality of their personal information, the security of the data, and by explaining what the data will be used for. However, people find income in particular difficult to answer and the refusal rate for this question is high across all surveys. Procedures are in place to deal with weaknesses such as these in the NIHCS data e.g. data is imputed using the Standard Occupational Classification (SOC) and the Annual Survey of Hours and Earnings (ASHE)

SIMILAR SURVEYS

Comparisons with other surveys are a good indication of the accuracy of statistics. In 2023 key statistics will be compared with other Northern Ireland surveys.

3. Timeliness and punctuality

Timeliness refers to the time gap between publication and the reference period.
Punctuality refers to the gap between planned and actual publication dates.

Dwellings across all of Northern Ireland's LGDs are surveyed as part of the NIHCS and therefore data collection takes several months. The quality assurance processes and suite of modelling which follow the data collection period also take a considerable amount of time. Prior to a HCS fieldwork period the NIHCS team prepares a timetable which is continually monitored. If delays occur, options will be considered to minimise the impact on publication dates where possible.

The original timetable for publishing the 2023 preliminary report was spring 2024, with the main report due in 2025. However, the NIHCS 2023 faced a number of challenges which resulted in delays to the timetable:

- The lack of surveyors working full-time on the survey resulted in capacity issues. The fieldwork period was extended by approximately 2 months to mitigate against this but surveyors were ultimately unable to complete all 4,995 surveys and 832 addresses had not been visited by the end of the extended fieldwork period.
- Due to the workload pressures faced by surveyors working part-time during fieldwork, an additional layer of quality assurance was added to ensure the robustness of data.
- There was a higher than usual rate of missing income data. This is vital for fuel poverty modelling and missing data must be imputed by the NIHCS team. The process involves the review of missing data on a case-by-case basis.
- The weighting and grossing process involves weighting for non-response. This is done using tenure information collected by surveyors at addresses where they do not complete a full survey. In 2023 there were 832 addresses which were not visited so no tenure was recorded against them. The NISRA Census team assisted with the calculation of a non-response weight using Census records.

It was vital that all of these issues were dealt with appropriately to ensure data quality, but they added several months to the NIHCS timetable. In order to publish some key statistics in a more timely manner, and following consultation with NIHCS statistics users, the format of the HCS main report was changed. Instead of publishing the preliminary report and a main report it was agreed to publish the preliminary report followed by a series of thematic reports. The purpose of this was to bring the reporting timeline closer to the original timetable, as well as meeting the needs of users who had indicated they would prefer shorter reports that have a combination of infographics, charts and commentary rather than one large, text heavy document.

The preliminary report was published in January 2026 and the thematic reports will follow in 2026. The change to a series of thematic reports will help to meet the needs of users by releasing statistics when available rather than waiting until all statistics are ready for publication in one report.

4. Accessibility and Clarity

Accessibility is the ease with which users are able to access the data, also reflecting the format in which the data are available and the availability of supporting information. Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

NIHCS reports are published on the Housing Executive website: [The Housing Executive - House Condition Survey](#)

Data from the 2011, 2009 and 2016 NIHCS are available on the UK Data Archive, and the 2023 data will be added when available. It was not possible to put NIHCS data from before 2009 on the UK Data Archive as permission was not sought from respondents. Since the publication of the 2016 survey, the way in which statistics are presented has changed. We received feedback from users that suggested many people prefer shorter reports that have a combination of infographics, charts and commentary rather than large, text heavy documents which can be difficult to navigate. Prior to the publication of the 2023 report we consulted with users about proposals to publish a series of shorter, themed reports based on the NIHCS 2023. The aim of this is to make it easier for users to find the key messages. The commentary will still include clear explanation of the statistics and we will still publish appendix tables. We received positive feedback from users and proceeded with the new report format.

Data tables are available in excel format. This will help to meet user needs by allowing re-use of the tables.

Detailed information about methodology, sampling, weighting and grossing, strengths and limitations, and other technical information will be available as a separate document on the Housing Executive website.

5. Comparability and Coherence

Comparability is the degree to which data can be compared over time and domain. Coherence is the degree to which data that are derived from different sources or methods, but refer to the same topic, are similar.

Comparability

The objectives for the NIHCS have remained broadly consistent since 2001 and three of them relate to comparability. This section will outline the objectives and explain how the objectives are met:

- *To facilitate a comparative analysis of housing conditions in Northern Ireland with other parts of the UK;*

- *To provide a reliable assessment of the energy efficiency of the stock and the level of fuel poverty in Northern Ireland on a comparable basis with the rest of the UK.*

The Housing Executive works in partnership with BRE to ensure the NIHCS uses broadly the same survey questions and methodology that the English Housing Survey uses (with the exception of questions or circumstances which are specific to Northern Ireland). In particular any updates to modelling for the English Housing Survey are implemented in the NIHCS.

NIHCS surveyors receive the same training (by BRE) as the surveyors who work on the English Housing Survey. This reduces surveyor variability and helps to ensure comparability with the English Housing Survey

- *To examine changes in the condition of the stock over time in terms of key Government measures: Decent Homes and the Housing Health and Safety Rating Standard;*

Although the NIHCS survey form is updated and amended for each survey, many aspects of the form will not be changed. This will ensure that comparison over time is possible.

The longitudinal element of the survey allows the Housing Executive to measure and analyse change over time and gain a greater insight into the dynamics of the housing market, for example, changes in tenure and the impact of policy related issues such as house sales and energy efficiency.

The resample element of the NIHCS also facilitates longitudinal analysis of changes in the housing stock, particularly with regards to renovations including those funded by home improvement grants.

The commentary in each NIHCS report provides statistics for the current report as well as a comparison with the most recent NIHCS. Where appropriate, reference is made to trends over a longer timescale. NIHCS reports going back to 2001 are available on the Housing Executive website.

In instances where methodology has changed e.g. fuel poverty modelling, the statistics have been produced using the new methodology, and an exercise has been completed to re-work previous results in line with the new model.

Coherence

NIHCS data are compared with the Family Resources Survey and the Continuous Household Survey, and for some questions, with NI Census data. To

facilitate this, the NIHCS team referred to the Office for National Statistics documents: 'Harmonised Concepts and Questions for Social Data Sources – Primary Principles', and 'Harmonised Concepts and Questions for Social Data Sources – Secondary Principles'. In 2016 an exercise was carried out to compare and match key social survey variables from the NIHCS against the ONS harmonised questions, the Family Resources Survey, and the Continuous Household Survey. In most instances questions were matched exactly, however in some cases it was necessary for NIHCS questions to be slightly different e.g. in consultation with the fuel poverty modelling team in BRE, a decision was taken to adapt the ONS income bands for the NIHCS (in order to facilitate fuel poverty modelling).