

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 NIHE's statutory responsibility under the 1981 Housing Order to *'regularly examine housing conditions and need'*. The Northern Ireland Housing Executive (NIHE) 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 take place at least every five years (on occasion interim surveys have been carried out). The most recent NIHCS report was published in 2011. The twelfth NIHCS was carried out in 2016 and is due to be published at the end of 2017. NIHCS reports are currently published on the NIHE website, and in hardcopy form. Following National Statistics assessment, the 2016 report will also be available on Gov.UK

The European Statistical System's Dimensions of Quality

The European Statistical System's (ESS) Dimensions of Quality give a broad understanding of quality, as represented by how fit for purpose a statistical output is. The following section covers the degree to which NIHCS statistics meet each of the five dimensions.

1. Relevance

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

WHO ARE THE USERS OF THE NIHCS?

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

HOW DO WE ENSURE THAT NIHCS STATISTICS MEET THE NEEDS OF USERS?

NIHE set up a user engagement group to enhance the value of the Northern Ireland House Condition Survey. 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: Rural Community Network, Department for Finance & Personnel, Belfast City Council, ABC Council, Department for Communities, Northern Ireland Federation of Housing Associations, DOE, and NIHE.

Details of the User Engagement Group are on the NIHCS section of the NIHE website along with contact details for any currently unknown users who would like to join the group.

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 statistics team consults with the NIHCS User Engagement Group at various stages of the NIHCS process. This enables the statistics 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. Prior to the 2016 NIHCS taking place, a user consultation process was 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.

The user engagement group also met to discuss their statistical requirements from the 2016 NIHCS, and were asked for their views on whether or not the data would meet their needs. These pre-survey consultation processes will be carried out for any future surveys.

NIHCS COVERAGE

The level of reporting in the main report is dependent on the size of the sample (which is determined by the available budget). Statistics are produced at Northern Ireland level, and if the sample size allows, district council 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, NIHE will not produce statistics at smaller geographical levels as they will not be robust. Instead, where possible, the statistics team will explore alternatives to help meet the needs of users eg. in 2011 when the sample size (2000) was too small to produce statistics at district council level, a modelling exercise was completed using Census data. This enabled the production of some key data at District Council level. NIHE 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 it is anticipated that some statistics will be produced at the new council level.

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 main NIHCS report provides statistics relating to dwelling stock, household profiles, state of repair, and the housing health and safety rating system. It is also 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.

DO USERS OF THE NIHCS THINK THE STATISTICS MEET THEIR NEEDS?

Consultation with users showed that the 2011 NIHCS statistics met users' needs and were used for:

- District Housing Plans
- 2012 Home Energy Conservation Authority (HECA) Progress Report
- NI Affordability Rental Index
- Empty Homes DSD & Tiger Aspect production 'The Great British Property Scandal'
- Welfare Reform – Housing Benefit
- Private Rented Sector Study – Tenant Survey

- Establishing unfitness in urban/rural classification
- Wheelchair Standards in Housing (DSD paper)
- Housing Models for Dementia: secondary analysis using data from the NIHCS
- Housing Statistics Publication: DSD
- NIHE Housing Research Bulletin – various articles

MEETING USER NEEDS IN THE FUTURE

NIHE will continue to identify new users of the NIHCS and to consult with them about how to meet their needs. Following the 2016 NIHCS, NIHE intends to carry out a survey of users to assess the level to which needs are met, and to identify any areas for improvement.

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. NIHE 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 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 2016 a random sample of 3000 dwellings were selected. Approximately 200 addresses were selected for each of the new council areas outside Belfast, and approximately 200 each for North, South, East and West Belfast. In addition the Causeway Coast Council area was divided into two areas to allow for more detailed information on holiday homes in Northern Ireland. The sample included two elements. The first stage was a resample element, consisting of approximately 1400 properties which were surveyed during the 2011 NIHCS. This will provide longitudinal analysis of changes in housing stock, including tenure. The second stage was a fresh sample of approximately 1600 properties taken from the Pointer Database held by the Northern Ireland Statistics and Research Agency.

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 statistics 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 ie. 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 2016 has still to take place, however it is broadly outlined below:

- A number of stock factors will be taken into account including building/household splits and mergers, new build and demolitions.
- Non-response is a potential source of error that can be difficult to correct. Adjustments for non-response will be made on the basis of tenure.
- The grossing process will control the survey-based statistics to external totals (super council area by tenure) in the public and private sector and urban and rural areas.
- The overall weighting and grossing strategy will involve designing and calculating separate weights for the re-sample and the fresh elements of the sample.
- The weights for these two elements will be combined with further adjustments for area and tenure.
- The two strands of the process (weighting and grossing) will then be merged into a single 'weight' for application to each sampled dwelling and the data held for it.

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. NIHE minimises measurement error in the following ways:

- *Intensive training of NIHCS surveyors*

All new surveyors complete a 6 day training course on the fundamental aspects of the HCS methodology (survey form, conventions etc.) when they begin working as a HCS surveyor.

In addition to this training, before every new NIHCS begins all surveyors attend a 2 day training course which is carried out by NIHE, Building Research Establishment (BRE), and NIHCS supervisors. The 2 day training event covers:

- Changes to the survey form since the last survey
- Changes to the tablet since the last survey
- The tablet system and software
- Housing Health and Safety Rating System (HHSRS)
- Updates on recording energy information
- Any other new updates or conventions
- Practice houses
- Indepth review of the social survey including interview techniques, and completing the household grid and benefits section
- National Statistics assessment update
- Safeguarding issues
- Confidentiality and security issues
- Survey administration

Part of the training focuses on areas of the questionnaire where judgement calls are required and there is the potential for considerable variation between surveyors eg. the HHSRS asks surveyors to decide on the level of risk for each hazard observed. The surveyors work through a number of HHSRS examples and have the opportunity to get feedback on the assessments they make from the BRE technical team. Surveyors are also provided with worked examples which they can refer to throughout the survey period. This element of the training process helps to reduce the levels of variability between NIHCS surveyors.

During the training surveyors complete two practice houses where they carry out a physical survey on a vacant house. This is followed by a de-briefing session with BRE technical experts and NIHCS supervisors, where model answers are provided and surveyors can discuss the decisions they made when recording information. This is another element of the training which helps to increase accuracy and reduce surveyor variability.

A further training session is held 1 week later. Between the two training events, surveyors carry out surveys on another two practice house. At the second training session surveyors provide feedback on the tablet/software problems they encountered while completing the practice surveys. This

enables problems to be rectified before the survey begins. Surveyors also have the opportunity to ask questions and clarify any issues with supervisors and with the technical experts from BRE.

- *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 eg, 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 NIHE and BRE*

NIHE 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 NIHE 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 NIHE.

NIHE

- 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 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.

Validation carried out on the 2011 NIHCS data indicated that the level of quality was high. A similar process will be carried out for the 2016 data.

- *Feedback from surveyors*

At the end of each survey, surveyors complete a feedback form which asks them to record any problems they encountered during the survey. These surveyor comments, as well as the supervisor guidance notes, are used to make improvements to the survey form and to identify any questions/areas which need more detailed training for the next survey.

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 Pointer database which is the address database for Northern Ireland, and contains the common standard address for every property in Northern Ireland. The database is maintained by Land and Property Services (LPS) with input from local councils and Royal Mail. The Pointer database is provided to the Northern Ireland Statistics and Research Agency (NISRA) for statistical purposes. NISRA uses Pointer as the sampling

frame for the selection of addresses on Government social surveys in Northern Ireland.

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 NIHE. Details of these quality assurance checks are available in the NIHCS Quality Assurance document:

http://www.nihe.gov.uk/nihcs_quality_assurance.pdf

NIHE carries out further quality assurance checks including:

- Checks on total numbers in sample and in each area
- Plotting the sample on a map to check distribution
- 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. This is difficult to correct so therefore it is important to get a high response rate to reduce the effects of non-response bias. The response rate for the NIHCS has remained high over the years (71% in 2011 and 72% in 2009). The response rate for the 2016 NIHCS is slightly lower at 67%, despite the fieldwork period being extended in order to increase the response rate. It is generally accepted that response rates to all types of surveys have been declining in recent years. Anecdotal evidence suggests the decline is due to a number of factors:

- people are increasingly busy,
- the number of requests to participate in surveys has led to people feeling 'over-surveyed'
- security concerns eg. letting strangers into their house, and worries about how their personal information will be used.

• *Achieving a high response rate*

NIHE takes steps to ensure the achieved response rate is high enough to produce accurate data:

- 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
- NIHE 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 is monitored throughout the survey. If an individual area has a low response rate steps will be taken to rectify this eg. in 2016 the fieldwork period was extended in order to increase the response rate in one new council area.
- *Correcting for non-response bias*
In the 2011 NIHCS non-response bias was corrected during the weighting and grossing process. An initial adjustment was made for non-response on the basis of tenure. Non-response was higher in private sector dwellings than in the social sector. An adjustment was made to correct this imbalance.
- *Non-response to individual questions*
Non-response to individual questions can also impact on the quality of data, therefore NIHE 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 ie. 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 eg. data is imputed using the Standard Occupational Classification (SOC), the Annual Survey of Hours and Earnings (ASHE), and the Family Resources Survey (FRS).

SIMILAR SURVEYS

Comparisons with other surveys are a good indication of the accuracy of statistics. In 2011 key statistics were similar to those emerging from 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 Northern Ireland are surveyed as part of the NIHCS and therefore data collection takes a significant amount of time. The quality assurance processes and suite of modelling which follow the data collection period also take a considerable amount of time. NIHE has a number of checks

and processes in place to ensure the timeliness and punctuality of NIHCS statistics:

- The NIHCS is a corporate Key Performance Indicator (KPI). This means that milestones are included in a Business Plan, and are monitored on a monthly basis by a review group.
- At the beginning of the survey a timetable is set which includes the key milestones and anticipated date of publication. The statistics team works to this timetable and regularly provides progress updates to the NIHCS Steering Group and to the Research Committee.
- Throughout the survey the progress of surveyors is monitored and any issues that could impact on timeliness and punctuality are addressed.
- NIHE implements time saving measures where possible eg. in 2009 tablets were introduced for data collection. The tablets had built in validation which reduced the time taken by supervisors carrying out validation on the survey forms. The introduction of tablets also meant that the data input stage of the survey process was no longer needed. This resulted in a reduction (of approximately 6 months) in the amount of time between data collection and publication of results.
- Throughout the survey process NIHE liaises with BRE to agree a timetable for, and monitor the progress of, the modelling work carried out by BRE.

The following section outlines the timetable for the NIHCS 2016. It is important to note that some of the stages run in parallel, or overlap with each other. The time taken to complete the NIHCS 2016 (from surveyor training to publication of the main report) is anticipated to be approximately 20 months.

- *Surveyor training and preparation for survey (3 weeks)*
Surveyor training takes place over two weeks. Surveyors attend an initial two day training course. They then complete two practice surveys before attending a follow up training day one week later. The completion of the practice surveys allows surveyors to identify any problems with the tablet/software/questionnaire etc. These can be raised at the follow up training day so that they can be resolved before the data collection begins.

On the completion of training surveyors begin preparing for the survey. This includes administrative tasks such as route planning and sending letters to households. Surveyors must ensure that householders will have received the letters before calling at addresses. This administrative stage takes approximately one week.

- Data collection and supervisor validation (5 months)*

The amount of time taken to carry out collect the data for the NIHCS is determined by the sample size. In 2016 there was a sample size of 3000 and data collection was carried out over approximately a 5 month period. The tablets have built in quality assurance checks which reduce the likelihood of error and therefore reduce the amount of time taken to carry out manual quality assurance checks. Data is uploaded to a secure website hosted by BRE (Building Research Establishment) and quality assurance checks are completed by NIHCS supervisors.
- Translation and validation by BRE (2 months)*

On completion of fieldwork BRE carry out a number of quality checks before the data are submitted to NIHE. These are described on p8 of this report.
- Validation and quality assurance by NIHE (6 weeks)*

Once NIHE receives the dataset a number of checks and processes are carried out to ensure the quality of the data. This includes validation and imputation, weighting and grossing, and work on derived variables. The processes are described in more detail on p8 of this report.
- Weighting and Grossing (2 weeks)*

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 steps were outlined in detail on p5 of this report.
- Validation, quality assurance and production of preliminary report (5 weeks)*

On completion of the weighting and grossing the data is sent to BRE to begin the modelling work. Further validation and quality assurance is carried out by NIHE and the preliminary report is published.
- Modelling by BRE (9 months)*

Once the weighting grossing has been completed a suite of modelling work is carried out in order to produce key government measures such as the Decent Homes Standard, Fuel Poverty rating and energy efficiency. The modelling work is carried out by BRE who provide NIHE with the modelled data for each measure as it becomes available. This enables NIHE to begin data analysis and report writing while the modelling is ongoing.
- Data analysis, report writing and quality assurance by NIHE (9 months)*

While the modelling work is being carried out by BRE the statistics team at NIHE begin data analysis, produce the appendix tables and write the report. Extensive quality assurance is carried out before the report is published.

In 2011 the NIHCS preliminary and main reports were produced in line with agreed timescales.

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.

The NIHCS main report is available in hardcopy and on the NIHCS website. The 2011 NIHCS report is currently available:

http://www.nihe.gov.uk/northern_ireland_house_condition_survey_main_report_2011.pdf

The 2016 report will be published when available. Following National Statistics assessment, the 2016 report will also be available on Gov.UK

Data from both the 2011 and 2009 NIHCS are available on the UK Data Archive, and the 2016 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.

Before writing the report the NIHE will consult with the User Engagement Group to get feedback about the format of the report. To increase clarity for users it is proposed that the main NIHCS report is divided into chapters by topic with easily readable titles and quick links to different topics/subjects. Each chapter will include commentary and tables/charts relating to the topic. All tables/charts will be clearly labelled, and figures reported in the commentary will be linked to the relevant appendix table. Limitations of the data will be clearly identified by users. Users will have the opportunity to discuss these proposals, and suggest other improvements that will result in the report better meeting their needs.

From 2016 data tables will be available in excel format as well as in a pdf document. 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 in the 2016 report as a separate link.

When the NIHCS 2016 is published on the NIHE website, NIHE will monitor the number of web hits to get an indication of numbers accessing the data and supporting information.

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 NIHE 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 NIHE 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 the 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 NIHE website.

In instances where methodology has changed eg. 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 statistics 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'. 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 eg. 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).

Analysis of the 2011 NIHCS showed that key statistics were similar to those emerging from other Northern Ireland surveys.

Additional principles

Producers of official statistics are asked to comment on four additional principles when reporting quality. These principles originate from the ESS Code of Practice:

1. Trade-offs between output quality components

Relevance – Accuracy and reliability

User consultation has shown that many users would like to see NIHCS statistics available for smaller geographical areas (which would meet their needs in terms of relevance). The level of reporting is determined by sample size, which is determined by available budget. If the sample size is not big enough it is not possible to produce robust data at these smaller geographical levels. Therefore a trade-off must be made against 'relevance' and 'accuracy and reliability'.

Prior to each NIHCS taking place NIHE produces a sample size options paper which outlines sample errors for each of the possible sample sizes, and indicates the costings for each sample size. The NIHCS Steering Group advises the NIHE

statistics team on selecting the most suitable sample size according to available budget, to enable reporting at a level which meets users' needs as much as possible, while also ensuring the accuracy and reliability of statistics.

In 2011 when the sample size was too small to produce robust data at District Council level, a modelling was carried out using Census data. This allowed District Council figures to be produced for key government measures such as fuel poverty.

Relevance – timeliness and punctuality

There is also a trade-off between 'relevance' and 'timeliness and punctuality'. As outlined under 'Relevance', the NIHCS provides a wealth of information relating to housing of all tenures across Northern Ireland. Gathering the data needed to produce these statistics can take several months. In addition, there is a substantial amount of work involved in completing the suite of modelling which produces the key government measures of housing quality. In order to meet users' needs in terms of coverage and content, 'relevance' is balanced against 'timeliness and punctuality', with a typical turnaround time of approximately 20 months between surveyor training and the publication of the final report.

Where possible, NIHE takes steps to reduce the turnaround time eg. with the introduction of the tablet in 2009 which eliminated the need for the data input element of the research.

Relevance – accuracy and reliability

There is a similar trade-off between 'accuracy and reliability' and 'timeliness and punctuality'. Throughout the NIHCS process NIHE has a number of quality assurance and validation procedures in place. These are balanced against timeliness and punctuality to ensure that while the statistics are made available as quickly as possible, NIHE is confident that they are accurate and reliable.

2. Assessment of user needs and perceptions

A House Condition Survey User Engagement Group was set up to facilitate the Housing Executive in providing information to, and gathering feedback from, key users of House Condition Survey statistics. The role of the User Engagement Group was outlined in the 'Relevance' section of this report.

In addition to this, NIHE keeps records of all data requests received in relation to NIHCS statistics. This helps the statistics team to determine which statistics are requested most often, which in turn helps when planning for future publications.

Following the 2016 NIHCS, NIHE intends to carry out a user survey to assess users' experiences of using the services of the statistics team to access NIHCS statistics.

3. Balance between performance, cost and respondent burden

Performance and cost

The NIHCS is carried out approximately every 5 years, and the budget is determined by the NIHE Chief Executive's Business Committee (CXBC). Although a significant cost, the NIHCS produces statistics which are of relevance and importance to a variety of users, and which are not available from any other source. The NIHCS Steering Group advises NIHE on getting value for money while producing high quality, robust statistics. Information about the actual spend is reported to the NIHCS Steering Group and to the CXBC.

Tables and charts from the NIHCS 2016 will be published in an open format to encourage more use of the data, and to allow users to either carry out further analysis, or re-use the tables in their own reports.

The statistics team saves money by learning from the developments in the survey questions and methodology that the English Housing Survey statistics team at DCLG undertakes. Keeping the survey questions the same (where possible) as the English Housing Survey allows comparability between NI and England.

NIHE is committed to introducing cost saving measures, such as the introduction of tablet technology for data collection in 2009. This eliminated the need for data input which reduced cost, and increased data quality as data validation was built into the tablet software. It also reduced the turnaround time between data collection and publication (by approximately 6 months).

Respondent burden

The main burden on respondents is the time taken to participate in the survey. Participation in the NIHCS is voluntary and is sought through informed consent. Householders selected to take part in the survey receive a letter in advance, which gives the background to the survey, explains what the results will be used for and the importance of their participation. During the survey householders have the opportunity to ask surveyors about the condition of their home and get advice about improvements.

Surveyors visit the addresses and if no contact is made, they leave call cards with NIHE contact details so that respondents can make an appointment at a time that suits them.

As part of the quality assurance process NIHE carries out a 5% telephone back check survey. The aim of the telephone survey is to confirm with householders that the survey was completed, to check key aspects of the data collected, and

to get householders' views on the surveyor eg. politeness and professionalism, and on their experience of taking part in the survey. During the telephone survey respondents are asked if the survey caused them any inconvenience. In 2016, 97% of respondents said that taking part in the NIHCS had not caused them any inconvenience.

The achieved response rate is another good indication of respondent burden. The response rate for the NIHCS has remained consistently high at approximately 70%, although there was a slight decrease to 67% in 2016. This is consistent with social surveys in general, which have seen a decrease in response rate in recent years.

4. Confidentiality, transparency and security

Confidentiality

NIHE has a number of procedures in place to ensure confidentiality of NIHCS statistics is maintained.

- Respondents to the NIHCS receive a letter prior to the survey taking place, which explains how their information will be kept confidential. NIHE has a confidentiality statement which is available on its website: http://www.nihe.gov.uk/confidentiality_and_access_statement.pdf
- All staff working on the NIHCS are trained in their obligations relating to confidentiality and sign a confidentiality agreement.
- Part of the surveyor training focuses on security of tablets and of any paperwork containing names and addresses, while carrying out surveys.
- Staff at BRE sign a third party confidentiality agreement (as is the case with any third party who requests access to NIHCS data).
- On the tablets, addresses and information relating to respondents are only accessible to the relevant surveyor.
- Disclosure control techniques are implemented before NIHCS statistics are released, to ensure that no individual will be identified. These include a combination of rounding, aggregation and suppression.

Transparency

NIHE has procedures in place to ensure the transparency of NIHCS statistics:

- NIHCS datasets are published on the UK Data Archive. Respondents are informed of this prior to the survey being carried out. The data supplied to the UK Data Archive are anonymised to protect confidentiality.
- The statistics adhere to pre-release rules which limit access to the statistics prior to publication. The pre-release statement is available on the NIHE website: http://www.nihe.gov.uk/research_statement_of_compliance.pdf
- A pre access list showing who has this access will be published on the website when available.
- A revisions policy outlines the steps taken to inform users about any necessary revisions: http://www.nihe.gov.uk/statistics_revisions_policy.pdf
- NIHE has published a document outlining the procedures in place for dealing with political pressures that might influence the methods, content or timing of NIHCS outputs: http://www.nihe.gov.uk/integrity_of_official_statistics.pdf
- NIHE will publish a timetable for NIHCS 2016.
- The NIHCS 2016 report will be published at 9.30am and will include contact details for the lead statistical official within NIHE.
- Detailed information about sampling, methodology, strengths and weaknesses, statistical techniques, and quality assurance processes will be included in the report and on the NIHE website.

Security

NIHE staff and NIHCS surveyors received training in relation to security of NIHCS data as well as any information relating to households:

- The data for the NIHCS 2016 were collected using tablets (Microsoft Surface) All tablet PCs were upgraded to Windows 10 Enterprise Edition. This version of Windows comes with Microsoft's encryption software BitLocker. This was configured to encrypt the hard disks of all NIHCS tablet PCs so that the data could not be read by third parties.
- In addition, the tablets were only accessible by password protected user account which allowed access to the survey app (itself password protected) and basic functionality such as the camera. The ability to view and alter the

underlying SQL database was maintained in a separate Windows account to which surveyors were not given access.

- Part of the surveyor training focuses on security when visiting homes. This training included keeping paperwork with names and addresses secure, and having nothing relating to the survey visible in a car.
- NIHCS data are anonymised with the use of schedule numbers so no individual can be identified by their responses. Data are uploaded to a secure website hosted by BRE. Data are sent between BRE and NIHE using secure transmission procedures.
- In NIHE, only the relevant members of the statistics team can access the BRE website which contains NIHCS data. The website is password protected.