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¹ Tables are available in excel format on the NIHCS section of the NIHE website

1.0 INTRODUCTION

This report presents the preliminary findings from the Northern Ireland House Condition Survey (NIHCS) 2016. The NIHCS meets the Northern Ireland Housing Executive's statutory responsibility under the 1981 Housing Order to '*regularly examine housing conditions and need*'. The preliminary findings relate to the dwelling stock as a whole and to dwelling unfitness. Findings in relation to fuel poverty, disrepair, Decent Homes, the Standard Assessment Procedure (SAP) the Housing Health and Safety Rating System (HHSRS), and household profiles will be available in the main NIHCS report, which will be published at the beginning of 2018.

2.0 IMPORTANT INFORMATION FOR USERS

The overall estimate of the housing stock in Northern Ireland is provided by the Northern Ireland Statistics and Research Agency (NISRA). It is important to note that since 2011 NISRA moved from using the Valuation and Lands Agency (VLA) database to using the Northern Ireland Pointer database which contains the common standard address for every property in Northern Ireland. This database is maintained by Land and Property Services (LPS). NISRA holds an up to date copy of this database and has undertaken analysis and quality assurance to create a preferred address sampling frame of domestic addresses for Northern Ireland. As new and improved address information becomes available, the reliability of dwelling totals across the 11 council areas will become further enhanced.

Before 2011 a number² of addresses had been included on the database relating to a new policy of registering empty homes in Northern Ireland. Between 2011 and 2016 quality assurance applied to the Pointer database by NISRA removed any identified non-domestic and non-eligible (i.e. non-viable dwellings which would not be brought back in to use) properties that were incorrectly recorded on the sample frame. It was noted in the 2011 HCS survey outcome table (See Appendix D, page 131 2011 House Condition Survey report) that 17 non-domestic properties had been included in the 2011 sample and had been excluded as out of scope. It is also possible that a small number of non-eligible dwellings may have been included in the sample and surveyed by HCS surveyors and that these dwellings were subsequently removed from the preferred address database after 2011 due to quality assurance. The precise number is unknown but is likely to be less than the 17 non-domestic properties³ removed because they were out of scope.

The reason why non-eligible dwellings were included in the HCS in 2011 may have been due to the different definitions used by HCS surveyors when deciding to include a dwelling in the survey (based on certain identified

² This is difficult to quantify because the sample frame database from 2011 no longer exists as it is constantly updated with addresses added and removed over time. The 2016 sample frame reduced by an estimated 40,000; however this was mainly due to the removal of non-domestic properties.

³ See footnote 2.

physical structures) and by NISRA staff when deciding to remove a property from the preferred address database (based on a dwelling's potential of being brought back into viable use).

Consequently, comparison with previous dwelling estimates, particularly the 2011 HCS numerical estimates, should be treated with some caution. The impact is considered to be small (within confidence intervals) and mainly affects the smaller group of vacant, unfit dwellings possibly in rural areas. This is highlighted where appropriate in the text of the report. In addition, when making comparisons with the 2011 NIHCS, or with any earlier survey, it should be noted that differences may be within confidence intervals and may not be statistically significant. Therefore differences should be checked using the confidence interval table on p12.

Both stock numbers and proportions are included in the text tables for previous HCS years, however, readers should consider the 2016 estimates of the number of dwellings as being the more reliable and robust⁴. This is less of an issue when comparing proportions. Since 2011, total stock numbers at Northern Ireland level as well as at council area level have reduced overall (by an estimated 40,000⁵).

Further information about the sample is available in the NIHCS User Guide (Section 5).

3.0 KEY POINTS

Overall, there has been little change in the tenure breakdown of the Northern Ireland dwelling stock since 2011.

The vacancy rate was 3.6 per cent⁶ (27,000) in 2016, 7.2 per cent (54,700⁷) in 2011 and 5.9 per cent (43,400) in 2009. As in previous years' vacancy rates are highest in the private rented sector (7%), although this has reduced since 2011 (13%); possibly a reflection of growing demand for this sector.

4 2016 numerical estimates may not be strictly comparable with previous House Condition Survey numerical estimates and in particular 2011 estimates.

5 LPS stock figures estimated 780,000 in 2016 www.finance-ni.gov.uk/publications/annual-housing-stock-statistics (Table 1.10). This contains additional addresses not included in the preferred address database for sampling surveys in Northern Ireland held by NISRA.

6 As NIHCS figures are estimated, they are generally rounded. However, in the cases of some key figures which are small, percentages may be reported to the first decimal place.

7 This figure may be an over-estimate which is possibly due to the inclusion of non-eligible dwellings on the Pointer database in 2011 (see section 2)

The headline unfit rate was estimated to be two per cent in 2016, and 4.6 per cent in 2011⁸. The 2016 HCS confirms the trend of unfit being associated with vacancy, with negligible levels of unfit in social housing.

The continued increase in the proportion of dwellings in urban areas since 2009 (indeed since 2001) and the corresponding decrease in rural areas, signalling a direction of change (31% in rural areas in 2009 compared to 27% in rural areas in 2016).

4.0 PRELIMINARY FINDINGS

4.1 Northern Ireland's dwelling stock and tenure

In 2016 Northern Ireland's total dwelling stock was revised (please see section 2.0) to approximately 740,000.

Table 1: Tenure showing vacants by tenure 2016

	Total Stock	Vacant	(%)
Owner occupied	481,030 (65.0%)	16,290 (60.5%)	3.4
Private rented and Others	137,450 (18.6%)	9,330 (34.7%)	6.8
Housing Executive	85,790 (11.6%)	220 (0.8%)	0.3
Housing Association	35,730 (4.8%)	1,080 (4.0%)	3.0
Total	740,000 (100.0%)	26,920 (100.0%)	3.6

Table 2: Tenure excluding vacants 2006-2016

	2006		2009		2011		2016	
	Number	%	Number	%	Number	%	Number	%
Owner Occupied	468,900	66.5	461,800	62.4	469,100	61.7	464,740	62.8
Private Rented and Others	80,900	11.5	124,600	16.8	125,500	16.5	128,120	17.3
Housing Executive	93,400	13.3	85,650	11.6	85,900	11.3	85,570	11.6
Housing Association	21,500	3.1	24,550	3.3	24,800	3.3	34,650	4.7
Vacant	40,300	5.7	43,400	5.9	54,700	7.2	26,920	3.6
Total	705,000	100.0	740,000	100.0	760,000	100.0	740,000	100.0

⁸ The quality assurance of the database after 2011 may have removed non-eligible dwellings that were surveyed in 2011 and therefore this figure should be treated with caution. In addition the difference is within confidence intervals (CI) and is not statistically significant.

Tables 1 and 2 show the following:

- a. The proportion (63%) of owner occupied dwellings in 2016 is similar to 2011 (62%). The number of owner occupied dwellings in 2016 was estimated to be 465,000.
- b. The proportion of private rented sector dwellings have also broadly remained the same as 2009 and 2011 at around 17 per cent. If vacant properties whose previous tenure was private rented are included, the proportion rises to 19 per cent. The number of private rented sector dwellings in 2016 was estimated to be 128,000.
- c. The percentage of occupied social dwellings (Housing Executive and Housing Associations dwellings combined) has remained similar between 2009 (15%), 2011 (15%) and 2016 (16%). In 2016 it was estimated that there were approximately 120,000 occupied social dwellings.
- d. The vacancy rate was 3.6 per cent (27,000) in 2016, 7.2 per cent (54,700⁹) in 2011, and 5.9 per cent (43,400) in 2009. As in previous House Condition Surveys, a high vacancy rate is particularly evident in the private rented sector where approximately 9,000 (6.8%) were vacant.

4.2 Dwelling age

Table 3: Northern Ireland's Dwelling Stock by Age 2009 – 2016¹⁰

	2009		2011		2016	
	Number	%	Number	%	Number	%
Pre 1919	106,500	14.4	87,700	11.5	77,200	10.4
1919 – 1944	78,200	10.6	68,100	9.0	65,720	8.9
1945 – 1980	306,900	41.5	303,500	39.9	300,890	40.7
1981 – 1990	86,300	11.7	94,500	12.4	94,490	12.8
Post 1990	162,100	21.9	206,200 ¹¹	27.1	201,700	27.3
Total	740,000	100.0	760,000	100.0	740,000	100.0

⁹ This figure may be an over-estimate which is possibly due to the inclusion of non-eligible dwellings on the Pointer database in 2011 (see section 2). In addition the % difference is within confidence intervals (CI) and may not be statistically significant.

¹⁰ Bands 1945-1964 and 1965-1980 showed increases and decreases in the number of dwellings built over consecutive House Condition Surveys possibly due to minor statistical distortions which result from sample surveys, and/or the difficulties surveyors sometimes have in the field allocating dwellings to narrow age bands and/or validation of year of construction on the Pointer database. They have been combined here to produce more robust figures.

¹¹ It is unlikely that post 1990 stock estimates in 2011 would be higher than for 2016. This appears to be an over-estimate and should be treated with caution. It may be due to minor statistical distortions which result from sample surveys, and/or validation of year of construction on the Pointer database.

Table 3 confirms the following:

- a. The continuing decline in the proportion of the stock built before 1919 from; 14% in 2009 to 12% in 2011 to 10% in 2016. These changes do not appear to be statistically significant.
- b. In addition, as in 2009 and 2011, there was a disproportionately high percentage of these older dwellings in the private rented sector (12.3% of all dwellings in this sector were built before 1919 compared to 10.5% for the owner-occupied sector). More than one-third (34%; 9,000) of all vacant properties were built before 1919.
- c. The 2016 HCS estimates that approximately 27% (202,000) of the stock was post-1990 (includes new construction less demolitions, closures and conversions).

4.3 Dwelling location

Table 4: Dwelling Location 2009 – 2016¹²

	2009		2011		2016	
	Number	%	Number	%	Number	%
Total Urban	508,520	68.7	529,700	69.7	542,260	73.3
Small Rural Settlement	116,480	15.7	122,030 ¹³	16.1	94,200	12.7
Isolated Rural	115,000	15.5	108,270	14.2	103,540	14.0
Total Rural	231,480	31.3	230,300¹⁴	30.3	197,740	26.7
Total	740,000	100.0	760,000	100.0	740,000	100.0

The 2016 HCS highlights the following:

- a. The continued increase in the proportion of dwellings in urban areas since 2009 (indeed since 2001). The proportion in 2009 was 69 per cent increasing to 70 per cent in 2011 and again to 73 per cent in 2016.
- b. The corresponding decrease in rural areas, signalling a direction of change (31% in 2009 to 27% in 2016). A decline in small rural settlements to 13 per cent in 2016. Proportions in isolated rural areas were fairly similar at around 14 per cent. The number of isolated rural dwellings in 2016 was estimated to be 104,000.

¹² Please note that the preliminary report provides information on urban and rural areas using the settlement type definition. However, the main report will provide an update of these figures using the eight-band classification definition not available at the time of this report.

¹³ This may reflect the inclusion of non-eligible dwellings in 2011 and should be treated with caution. Similarly, the total rural 2011 estimate should be treated with caution.

¹⁴ See footnote 13.

4.4 Dwelling unfitness

In 2016 there were an estimated 15,000 unfit dwellings in Northern Ireland, representing a headline rate of two per cent. This is similar to the unfitness rate in 2009 (2.4%). The apparent numerical and proportionate increase in unfitness in 2011 (4.6%: 35,000 dwellings: 28,000 of which were vacant) may have been partly due to the inclusion of non-eligible properties on the Pointer database in 2011 (See Section 2) and subsequently removed from the Pointer database 2011-2016.

Table 5: Northern Ireland's Dwelling Stock – unfitness rates by tenure 2009-2016¹⁵

	2009		2011		2016	
	Number	%	Number	%	Number	%
Owner Occupied	4,400	0.9	4,600	1.0	5,160	1.1
Private Rented and Others	2,700	2.2	2,500	2.0	2,000	1.6
Social Housing	*	>1.0	*	<1.0	*	<1.0
Vacant	10,300	23.8	28,000 ¹⁶	51.2	7,970	29.6
Total	17,500	2.4	35,200	4.6	15,130	2.0

Table 6: Northern Ireland's Dwelling Stock by Occupation – Unfitness by Tenure 2016

	Occupied	Occupied Unfit	Vacant	Vacant Unfit	Total Unfit
Owner Occupied	464,740 (65.2%)	5,160 (1.1%)	16,290 (60.5%)	6,950 (42.7%)	12,110
Private Rented and Others	128,120 (18.0%)	2,000 (1.6%)	9,330 (34.7%)	1,020 (10.9%)	3,020
Social Housing	120,220 (16.9%)	* (<1.0%)	1300 (4.8%)	* (<1.0%)	*

Table 5 shows that since 2009 the rate of unfitness has remained unchanged in the **occupied** owner occupied sector, private rented and social sectors. Table 6 shows that unfitness is associated with vacancy and has a slightly higher rate in occupied private sector.

- a. As in earlier House Condition Surveys, unfitness is particularly associated with vacancy. The proportion of vacant dwellings recorded as unfit in 2016 was 29.6 per cent (approximately 8,000 properties).
- b. Overall, the proportion of unfit dwellings which were vacant in 2016 (53%) was less than the 2009 proportion (59%)¹⁷. As would be expected and similar

¹⁵ A * symbol denotes if numbers were nil or negligible.

¹⁶ This appears to be an over-estimate and may reflect the non-eligible dwellings recorded on the Valuation and Lands Agency (VLA) database in 2011 before the move to the new Pointer database.

to previous findings most unfit dwellings (8,600; 57%) were built before 1919. A further 16 per cent of unfit dwellings in 2016 were built between 1919 and 1944.

5.0 NIHCS USER GUIDE

The purpose of this guide is to help users to better understand the NIHCS statistics and to aid the interpretation of statistics.

5.1 Survey objectives

The NIHCS 2016 objectives are broadly consistent with those of the 2001, 2004, 2006, 2009 and 2011 surveys.

- To provide a comprehensive picture of the dwelling stock and its condition in 2016 for Northern Ireland and each of the 11 new District Councils: Belfast will be divided into four, giving a total of 14 areas;
- To facilitate a comparative analysis of housing conditions in Northern Ireland with other parts of the UK;
- To examine the association between dwelling conditions and the social and economic circumstances of households;
- To examine changes in the condition of the stock over time in terms of key Government measures: Decent Homes Standard and the Housing Health and Safety Rating System.
- 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.

5.2 The NIHCS sample

The NIHCS is a survey based on a stratified random disproportionate sample of 3000 dwellings. The published data are estimates for Northern Ireland housing stock based on this sample. The sample design process, and the weighting and grossing process are carefully designed to ensure that the results are accurate and representative of the total housing stock.

Selecting sample size

Sample size was an important factor in the design of the NIHCS sample as it ultimately determines the level of geographical disaggregation for any analysis undertaken. User consultation highlighted the importance of having results at

¹⁷The proportion for 2011 appears to be high at 80% (number of unfit vacants as a proportion of total unfit dwellings). As in footnote 16 this may reflect the non-eligible dwellings recorded on the Valuation and Lands Agency (VLA) database in 2011 before the move to the new Pointer database.

Council level (there are 11 councils in Northern Ireland). In order to produce accurate results at this level the sample needs to be of a sufficient size. However, budgetary pressures also had to be considered. The agreed sample size (3000) reflected an optimal balance between user requirements and budgetary priorities, and was approved by both the NIHCS Steering Group and the NIHE's Board of Directors (the Chief Executive's Business Committee).

Sample size implications

A sample size of 3000 allows robust analysis not only at Northern Ireland level, but also by important subgroups such as tenure, age of dwelling, type of dwelling, rural/urban. Key figures (such as unfitness and fuel poverty) for the 11 Council areas will also be available, although caution will be required if analysis by subgroup within Council area is undertaken. The robustness will depend on the achieved response rate in each area. This will be determined during the data analysis process. Cautions will be included in the report where appropriate.

Sample frame

The sample for the NIHCS is drawn from a subset of 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. Every month LPS provides the Northern Ireland Statistics and Research Agency (NISRA) with an updated version of the database. Pointer is NISRA's preferred address database and is used as the sampling frame for the selection of addresses on Government social surveys in Northern Ireland. Detailed information about the quality assurance checks carried out on the sample frame and on the sample itself are available on the NIHE website http://www.nihe.gov.uk/nihcs_quality_assurance.pdf

Sample design

The 2016 Northern Ireland House Condition Survey (HCS) was based on a random sample of 3,000 dwellings completed in two stages.

- The first stage involved including all the full surveys completed as part of the 2011 HCS (resample: 1434 surveys). Consideration had to be given to the location of addresses because the 2011 HCS eleven council areas were approximations only, based on the grouping of existing LGDs, as boundaries were not finalised at the time of the 2011 HCS sampling. Consequently, this meant there were some sample variations in the final totals by the eleven council areas in the 2016 HCS sample.

- The second stage was a fresh random sample of 1,566 properties selected by council area to ensure that each area total (fresh and resample) added to approximately 200. In Belfast Council Area, a total of 635 households were selected (150 in North, 151 in East, 171 in South and 163 in 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 fresh sample frame, in 2016, was Pointer (NISRA's preferred database) held at the Northern Ireland Statistics and Research Agency (NISRA). This database (Pointer) contained a subset of the computerised records for domestic residential property maintained by the LPS and had been subject to extensive quality assurance and validation since 2011.

Additional sampling procedures

Addresses were selected at random and no substitution of addresses was allowed. In instances where surveyors encountered a multi-dwelling address and there was no sub-number on their contact sheet, there were processes in place to ensure the correct address was selected. In the case of a fresh sample address a kish grid was used to randomly select the sub-number. In the case of a resample address the statistics team looked up the details of the previous survey in order to identify which sub number had been surveyed, and the same sub-number was surveyed in 2016. If the address was a single-dwelling address in the previous survey, but had subsequently changed to a mutli-dweling address, a kish grid was used to randomly select the sub-number.

Confidence interval

Sample surveys provide estimates of the population and these estimates are subject to what was traditionally known as 'sampling error' but is now more commonly referred to as 'confidence interval'. This indicates to the reader the +/- range in which the reader can be 'confident' that the true value of the statistic is found. There is an inverse relationship between sample size and confidence interval. As the sample size increases the confidence interval decreases. 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 the confidence interval is calculated, even approximately to determine to what extent apparent differences e.g. between Councils are real, or simply the result of statistical vagaries.

It has become normal practice to estimate the confidence interval at the 95% confidence level i.e. the results would be replicated nineteen times out of twenty if the survey were repeated. The formula for sample error is:

$$\sqrt{P(100-P)}$$

$$\pm 1.96 \quad N-1$$

Where P is the percentage in question and N is the sample size in question. Where N is large, for convenience this 1 is ignored. The result of application of this formula is that the percentage error increases as the sample size is reduced and the relative error increases when the percentage is very low or very high e.g. less than 10% or higher than 90%.

Taking an example of a sample size of 100 and where the percentage in question is 10

S sample error =

$$\sqrt{10 \times 90}$$

$$\pm 1.96 \quad 99$$

$$= \pm 5.91\%$$

Thus the percentage (10%) should be read as 10% \pm 5.91% i.e. one can only be sure that the percentage is between 4.09% and 15.91%. For 50% and a sample size of 100 the sample error would be \pm 9.85% i.e. the range would be from 41.15% to 59.85%.

The table of confidence intervals below has been calculated for an approximate achieved sample, after allowance for non-response.

Table 1: Confidence intervals at 95% confidence level

%		5 or 95	10 or 90	15 or 85	20 or 80	25 or 75	30 or 70	35 or 65	40 or 60	45 or 55	50 50
Sample Size:	100	4.3	5.9	7.0	7.9	8.5	9.0	9.4	9.7	9.8	9.8
Unfit	50	6.1	8.4	10.0	11.2	12.1	12.8	13.4	13.7	13.9	14.0
Vacant	80	4.8	6.6	7.9	8.8	9.5	10.1	10.5	10.8	11.0	11.0
Pre 1919	200	3.0	4.2	5.0	5.6	6.0	6.4	6.6	6.8	6.9	6.9
Private Rented	340	2.3	3.2	3.8	4.3	4.6	4.9	5.1	5.2	5.3	5.3
Social Housing	410	2.1	2.9	3.5	3.9	4.2	4.4	4.6	4.7	4.8	4.8
Rural	560	1.8	2.5	3.0	3.3	3.6	3.8	4.0	4.1	4.1	4.1
Owner Occupied	1200	1.2	1.7	2.0	2.3	2.5	2.6	2.7	2.8	2.8	2.8
Urban	1470	1.1	1.5	1.8	2.0	2.2	2.3	2.4	2.5	2.5	2.6
Occupied	1940	1.0	1.3	1.6	1.8	1.9	2.0	2.1	2.2	2.2	2.2
Northern Ireland	2020	1.0	1.3	1.6	1.7	1.9	2.0	2.1	2.1	2.2	2.2

5.3 Response rates

The 2016 sample issued consisted of the following components.

Resample from 2011	1434
Fresh Sample (Pointer)	1566
Total Sample	3000

1. The following table summarises the Survey outcome.

Survey outcome 2016

	Number	%
Full Survey	2023	67
No contact made	318	11
Access refused to Surveyor	494	16
Access refused at NIHE	146	5
Address untraceable	0	0
Dwelling derelict	8	<1
Dwelling demolished	6	<1
No longer usable as a dwelling	2	<1
Other	3	<1
Total	3000	100

2. Of the 3,000 addresses issued to surveyors, full surveys were completed for 2,023 properties giving a gross response rate of 67%. However, the potential response was 2,984 (excluding not traced, derelict, demolished and no longer usable as a dwelling), giving a response rate for the physical survey of 68% (2,023 out of 2,984).
3. The response rate for the household survey was higher. Overall, 1,942 inspected dwellings were occupied and of these 1,917 household interviews were achieved, a response rate of 99%.
4. The number of vacant dwellings visited during the Survey was 81. Therefore the total number of dwellings in which a household interview would have been possible was $2,984 - 81 = 2,903$. This gives a social survey response rate of 66% (1,917 interviews out of 2,903).

The following table summarises the response rates:

Response rates 2016

Full surveys as a % of sample	67%
Full physical surveys as a % of existing dwellings	68%
Full social surveys as a % of inspected occupied dwellings	99%
Full social surveys as a % of existing dwellings	66%

5.4 Weighting and grossing

Design, calculation and validation of statistical weights for the 2016 Northern Ireland House Condition Survey

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 process¹⁸ and the survey process itself.

In the case of the 2016 HCS there were a number of stock factors taken into account, when weighting, including building/household splits and mergers, new build and demolitions.

Survey weighting factors that were taken into account included non-response. Adjustments for non-response were based on the sample and achieved surveys and tenure (public and private). Corrections were also required for the oversample in the Causeway Coast area and to take into account, as much as possible, the boundary changes within and around the Belfast (North, South, West and East) area since 2011.

The grossing process corrected to the known external totals of the Pointer database held by NISRA.

The overall weighting and grossing strategy involved designing and calculating separate weights for the re-sample and the fresh elements of the sample.

The weights for these two elements were combined and further adjustments were made for tenure, boundary changes in and around Belfast and to the Pointer sample frame totals.

In addition, the two strands of the process (weighting and grossing) were merged into a single 'weight' for application to each sampled dwelling and the data held for it.

For each step of the weighting and grossing process area tables by tenure (including vacants), construction date and fitness were checked for accuracy. A final quality assurance of statistical outputs by key variables was also undertaken.

5.5 Quality information

Quality assurance (QA) checks are carried out by the producers/suppliers of the administrative data which is used to select the sample for the HCS. QA checks are also carried out at various stages of the survey by the NIHE

¹⁸ Refer to 5.2 for detailed information about the NIHCS sampling process

Research Unit, Building Research Establishment (BRE) and by HCS supervisors.

The NIHE has produced a document which sets out the quality assurance processes carried out at each stage of the survey. It has also produced a background quality report which shows the degree to which the NIHCS statistics meet the European Statistical System's five dimensions of quality. Both documents are available on the NIHE website:

http://www.nihe.gov.uk/index/corporate/housing_research/house_condition_survey/corporate-quality-information.htm

5.6 Strengths and weaknesses

Strengths

- The NIHCS provides statistics at national level relating to the dwelling stock, unfitness, household profiles, state of repair, and the Housing Health and Safety Rating System. When the sample size allows it also provides statistics at smaller geographical levels such as Council area.
- It is the only source of data for key government measures of housing quality such as the Decent Homes Standard, Fitness Standards, fuel poverty, energy efficiency, SAP and Repair Costs.
- All tenures and types of housing are included, for example, owner occupied and rented housing, vacant dwellings, houses in multiple occupation, apartments, urban and rural dwellings.
- The sample design and the weighting and grossing processes ensure accurate and reliable data are produced.
- The response rate has remained high over the years, reducing the effect of non-response bias. The response rate has fallen slightly in 2016 although this is consistent with the experience of most household surveys in the UK.
- The consistency of the questionnaire over time, as well as the resample element of the survey, allow changes in the condition of stock over time to be measured.
- The partnership with Building Research Establishment (BRE) ensures that the questionnaire is (as much as possible) the same as the English Housing Survey, thus enabling comparability with England, and where possible with Scotland and Wales.
- Where necessary, the questionnaire is tailored to NI conditions.
- The methodological expertise of the NIHCS Steering Group and of BRE ensures that sound methodology is used.
- Intensive training of surveyors by a combined BRE/NIHE team, monitoring by NIHCS supervisors, tablet and website validation, and validation by NIHE and BRE all help to minimise surveyor variability and reduce the possibility of measurement error.

- Thorough quality assurance processes are in place at all stages of the NIHCS to ensure that high quality data are produced:
http://www.nihe.gov.uk/index/corporate/housing_research/house_condition_survey/corporate-quality-information.htm
- Key NIHCS socio-demographic statistics have shown consistency over time and are similar to those emerging from other surveys in Northern Ireland eg. the Family Resources Survey, the Continuous Household Survey, and the Census.
- Regular engagement with users ensures that the statistics meet user needs.
- Before publishing statistics for any sub-groups, checks are carried out to ensure that the data are robust and users are provided with information regarding confidence intervals.
- Statistical disclosure control techniques are used to safeguard the confidentiality of respondents to the NIHCS.
- The NIHCS team upholds the principles of the Data Protection Act.

Weaknesses

All surveys have limitations which can be caused by a number of factors such as budget and resources. NIHE monitors any issues that could cause weaknesses in the data and take steps to address them. These are outlined below.

1. Sample size

The size of the sample determines the geographical level at which analysis can be carried out. User consultation showed that many NIHCS users need results at the new Council level. In some cases because of budget driven restrictions in sample size, robustness of Council level figures are less than optimal.

A sample size of 3000 will provide robust data at Northern Ireland level, and possibly at new Council areas for some sub-groups (depending on the achieved response rate in each area). This will be examined further once the weighting and grossing process has been completed.

It is therefore normally not possible to carry out three-way cross tabulations eg. fuel poverty in rural areas by new Council area, as the data would not be robust enough. Requests for three-way analysis are always checked for robustness and only provided if meaningful.

Addressing the issue of sample size:

When the sample size places limitations on data analysis NIHE will investigate other ways to meet user needs eg. in 2011 when the sample size was 2000, a modelling exercise was carried out using 2011 NI Census data in

order to produce robust data for some key government measures at the new Council area level.

NIHE will also examine the possibility of recoding sub-groups in order to produce meaningful data. NIHE will inform users about the implications of the smaller sample size eg. in 2011 cells in some appendix tables contained a * rather than a number. This indicated to users that the cell contained a small number and that percentages should be used with caution.

In addition, NIHE will, where possible, provide data to users which might only be useful for indicative purposes but not of sufficient robustness for quoting or publishing. The limitations of this data will be made clear to the users.

2. Non-response to individual questions

This can 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 non-existent.

Consistently there are two variables which are likely to have incomplete data. These variables 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. This is not unique to the NIHCS and is an issue for many surveys.

Addressing the issue of non-response to individual questions:

Procedures are in place to deal with non-response to individual questions in the NIHCS:

- built in tablet validation and ongoing monitoring and checking by NIHCS supervisors and NIHE staff
- consistency checks
- imputation work for key data items such as income. This involves using other known data items such as age, employment status, Standard Occupational Group (SOC), if there is a partner, benefit data and tenure, alongside estimated average incomes from other sources such as the NI Annual Survey of Hours and Earnings (ASHE) and the Family Resources Survey (FRS), to help impute an estimated banded income value. Imputations are cross-referenced with similar NIHCS sub-groups where average income bands have been supplied for 2016.

3 Changes to the sample frame

The overall estimate of the housing stock in Northern Ireland was provided by NISRA from the Pointer database. It is important to note that since 2011 NISRA moved to using the Northern Ireland Pointer database (previously the Valuation and Lands Agency database was used) for sampling surveys. This database has been subject to ongoing quality assurance and validation and this, along with ongoing address checks, means that as new and improved address information becomes available dwelling totals across the council areas will become more reliable. Consequently, comparison with previous overall dwelling estimates published in House Condition Surveys should be treated with caution.

Addressing the issue of the changes to the sample frame:

It is recommended that readers use the 2016 number estimates as being the more reliable and robust. Caution notes are included in the report which explain the reasons for the reduction in the overall stock figures. In addition, when making comparisons with previous years the proportion is generally reported rather than the number.

5.7 **Definitions**

These definitions relate to information produced in the NIHCS preliminary report.

The Fitness Standard

The current Fitness Standard is set out in Schedule 5 of the Housing (Northern Ireland) Order 1992. This schedule states that a dwelling is unfit for human habitation if it fails to meet one or more of the following requirements:

- It is structurally stable.
- It is free from serious disrepair.
- It is free from dampness prejudicial to the health of the occupants (if any).
- It has adequate provision for heating, lighting and ventilation.
- It has an adequate supply of wholesome water.
- There are satisfactory facilities in the house for the preparation and cooking of food, including a sink with a satisfactory supply of hot and cold water.
- It has a suitably located water closet for the exclusive use of the occupants (if any).
- It has, for the exclusive use of the occupants (if any), a suitably located fixed bath or shower and wash-hand basin, each of which is provided with a satisfactory supply of hot and cold water.
- It has an effective system for the draining of foul, waste and surface water.

In addition, flats may be classified as unfit if the building or part of the building outside of the flat fails to meet any of the following requirements and by reason of that failure is not suitable for occupation:

The building or part is structurally unstable.

- It is free from serious disrepair.
- It is free from dampness.
- It has adequate provision for ventilation.

- It has an effective system for the draining of foul, surface and waste water.

Tenure

Definitions of tenure types are outlined in the NIHCS surveyor manual, and are broadly comparable with those used in the English Housing Survey.

- a) *owner occupied* - includes outright owners, those buying with a mortgage and shared owners (people who are part renting and part buying their homes from the Northern Ireland Co-Ownership Housing Association). Includes anyone who is buying their home from a housing association or from the Housing Executive. Note: the Housing Executive has now sold more than 100,000 dwellings.
- b) *private rented and others* - rented from a private landlord, private company, other organisation, relative or friend. Includes tied accommodation and any 'other' type of accommodation not covered by the standard tenure types.
- c) *Housing Executive* - rented from the NIHE.
- d) *Housing association* - rented from a housing association, including co-operatives and housing charitable trusts.

6.0 CONTACT DETAILS

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