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## Reference Guide

# Housing Reference Guide



**National Household Survey, 2011**



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- |                |  |
|----------------|--|
| .              | not available for any reference period   |
| ..             | not available for a specific reference period  |
| ...            | not applicable   |
| 0              | true zero or a value rounded to zero   |
| 0 <sup>s</sup> | value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded |
| <sup>p</sup>   | preliminary  |
| <sup>r</sup>   | revised  |
| X              | suppressed to meet the confidentiality requirements of the <i>Statistics Act</i>                                   |
| E              | use with caution   |
| F              | too unreliable to be published   |
| *              | significantly different from reference category (p < 0.05)   |

Catalogue no. [99-014-X2011007](#)

## Table of contents

	Page
<b>Definitions and concepts .....</b>	<b>4</b>
<b>Classifications.....</b>	<b>5</b>
<b>Questions .....</b>	<b>6</b>
<b>Data and other products.....</b>	<b>6</b>
<b>Data quality.....</b>	<b>6</b>
<b>Comparability with other data sources .....</b>	<b>9</b>

### Definitions and concepts

The 2011 National Household Survey (NHS) questions collected information on housing for all private households. Variables pertaining to housing information can be classified into three groups: (1) dwelling characteristics; (2) household characteristics related to shelter costs; and (3) other household characteristics.

**Dwelling characteristics** refer to the physical attributes of the living quarters occupied by the household. The NHS collected the following information: number of [Rooms](#); number of [Bedrooms](#); [Period of construction](#); [Condition of dwelling](#); [Condominium status](#) and [Value of dwelling](#). Dwelling characteristics, except the value of the dwelling, were collected for all occupied private dwellings. The value of the dwelling was collected only for owner-occupied dwellings that were not located on an agricultural operation that was operated by a member of the household. This exception occurred because households that rent the dwelling have difficulty assessing the value of the dwelling because they were not involved in the purchase. Furthermore, owner-occupied dwellings on an agricultural operation were excluded because often the value of dwelling cannot be separated from the value of the agricultural operation.

**Shelter costs** refer to the average monthly total of expenses related to the dwelling paid by households. For owner-occupied dwellings, the shelter costs are referred to as [Owner's major payments](#). For renter-occupied dwellings, the shelter costs are referred to as [Gross rent](#). The NHS also collected the following information related to shelter costs: whether a rented dwelling was subsidized (see [Subsidized housing](#)) and whether the owned dwelling had a mortgage (see [Monthly mortgage payment](#)). Shelter costs and the related variables were disseminated for owner-occupied dwellings and renter-occupied dwellings. Shelter costs were not disseminated for band housing, dwellings on reserves and dwellings on an agricultural operation operated by a member of the household. Shelter costs for band housing were not collected because, for historical and statutory reasons, the usual components of shelter cost payments do not always apply. Shelter costs on reserves were not disseminated because a large portion of dwellings on reserves were band housing (for which shelter costs were not collected); thus, shelter costs of only owner-occupied dwellings and renter-occupied dwellings on reserves were not representative of the entire reserve. Shelter costs were not collected for dwellings on an agricultural operation operated by a member of the household because often the shelter costs of the dwelling cannot be separated from the shelter costs of the agricultural operation.

**Household characteristics** refer to characteristics of the person or group of persons occupying the private dwelling. It is different from the characteristics of persons in that the household characteristic is generally intended to describe all household members. Household characteristics collected by the NHS that are commonly used in housing analysis include: [Tenure](#), [Household size](#), [Household total income](#) and [Household type](#). Household characteristics were collected for all private households. The NHS also collected information to identify the [Household maintainers](#); that is, which household members paid the shelter costs. A common approach in housing analysis is to examine the characteristics of the [Primary household maintainer](#) (such as age) in relation to dwelling, shelter costs, and other household characteristics.

**Housing adequacy**, **housing suitability**, and **housing affordability** are key topics of interest for governments and housing organizations. Variables collected in the NHS are combined to create indicators on these key objectives to help governments and organizations manage the state of housing in Canada.

An indicator for housing adequacy is the condition of the dwelling. An indicator for housing suitability (a topic commonly referred to as crowding) is whether the dwelling has enough bedrooms for the size and composition of the household. Another indicator of crowding is the number of persons per room in a dwelling. An indicator of housing affordability is the proportion of household total income that is spent on shelter costs.

### Classifications

Classifications used for indicators of housing adequacy, housing suitability and housing affordability are based on generally accepted classifications used by governments and housing organizations, like the Canada Mortgage and Housing Corporation (CMHC).

[Condition of dwelling](#) (an indicator for **housing adequacy**) is classified into three groups: needing regular maintenance only, needing minor repairs, and needing major repairs. Dwellings in need of major repairs are considered an indicator of inadequate dwellings by housing organizations. To guide respondents in answering the question on the condition of the dwelling, examples are included in each response category. The examples of 'major repair' were intended to capture problems that compromised the dwelling structure or the major systems of the dwelling (heating, plumbing, and electrical). Specifically, the questionnaire contained the following examples for 'major repairs': 'defective plumbing or electrical wiring, structural repairs to walls, floors or ceilings, etc.' Examples of 'regular maintenance' and 'minor repair' were also on the questionnaire. For 'minor repairs,' the examples on the questionnaire were: 'missing or loose floor tiles, bricks or shingles, defective steps, railing or siding, etc.' For 'regular maintenance,' the examples on the questionnaire were: 'painting, furnace cleaning, etc.'

**Housing suitability** of a dwelling is based on the National Occupancy Standard (NOS) (see [Housing suitability](#)) developed by the CMHC. The housing suitability indicator classifies dwellings as 'not suitable' if the dwelling does not have enough bedrooms for the size and composition of the household, as calculated using the NOS. Dwellings that are not suitable are also further classified by the shortfall of the number of bedrooms when compared to the required number of bedrooms based on the NOS.

The [Shelter-cost-to-income ratio](#) (an indicator for **housing affordability**) is classified into several ranges, as shown in the data tables. The classification related to housing affordability is whether the occupants of the dwelling paid 30% or more of household total income towards shelter costs. In 1986, the CMHC and the provinces agreed to use the 30% threshold to measure affordability for the purposes of defining need for social housing. This agreement was reached during the development of the federal/provincial social housing programs. Research on housing affordability in the territories often uses the same threshold.

Classifications for other housing variables are shown in the [National Household Survey Dictionary](#), Catalogue no. 99-000-X.

## Questions

Most 2011 [National Household Survey \(NHS\)](#) respondents received the [2011 National Household Survey Form N1 questionnaire](#), while respondents living on Indian reserves, in Indian settlements, in Inuit regions and in other remote areas received the [2011 National Household Survey Form N2 questionnaire](#). On both questionnaires, data on housing was collected in Step E. The first page of housing questions (E1 to E6) collected household and dwelling characteristics applicable to all households, regardless of housing tenure. The second page of housing questions (E7 to E10) collected shelter costs information. Skip patterns on the shelter costs questions are based on housing tenure, as the components of shelter costs vary on this characteristic.

The main difference between the housing questions on the N1 and N2 forms was that the N2 allowed for housing tenure responses of 'band housing' and the skip patterns for shelter costs questions were different to account for 'band housing' responses. Also, the examples presented in the question on the number of rooms and bedrooms were different on the N2 form so that the examples would be relevant for northern areas. Otherwise, the housing questions were identical.

## Data and other products

Data for the 2011 National Household Survey housing variables were released on September 11, 2013, as part of an integrated release with income variables.

The products published using 2011 NHS housing data include:

- [Data products](#)
  - NHS Profile
  - NHS Data Tables
- [Analytical products](#)
- [Reference products](#)

For more information on and access to 2011 NHS data, please refer to the [2011 National Household Survey \(NHS\)](#) website.

## Data quality

The [National Household Survey User Guide](#), Catalogue no. 99-001-X, contains helpful general information on how to use and interpret the estimates produced with the data that were collected.

Additional information to help interpret estimates specifically related to housing variables are provided below. However, it is recommended that the *National Household Survey User Guide*, Catalogue no. 99-001-X, be read first as it contains information relevant for all NHS topics, including housing, which is not summarized here.

## Question-level imputation rates

Even though a household returns a questionnaire, some questions may not have been answered or had an invalid response. These records undergo imputation to estimate a valid value for the question. Table 1 contains the imputation rates for the housing questions. These rates are, on average, twice as high when compared to the 2006 long form (2B) Census housing imputation rates.

# Housing Reference Guide

**Table 1 Imputation rates in the National Household Survey for housing questions, Canada, provinces and territories**

Question no.	Variable	Can.	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
		percentage													
E1	Household maintainer <sup>1</sup>	11.8	10.4	9.6	9.6	9.8	9.7	13.1	11.4	9.9	12.8	12.5	8.7	3.0	6.4
E2	Tenure <sup>2</sup>	10.7	9.5	9.3	8.8	9.2	9.7	11.6	9.6	8.7	11.2	11.1	10.5	3.2	3.7
E3	Condominium status <sup>2</sup>	9.4	9.4	9.3	8.2	9.3	9.1	9.7	8.2	7.5	10.3	9.9	8.2	5.7	5.2
E4(a)	Rooms <sup>2</sup>	12.8	11.4	10.3	9.9	10.5	10.9	14.1	10.8	9.8	13.5	15.0	9.9	4.5	3.3
E4(b)	Bedrooms <sup>2</sup>	11.4	10.0	9.7	9.2	9.6	9.7	12.7	10.0	9.0	12.4	12.3	8.9	3.2	3.3
E5	Period of construction <sup>2</sup>	13.5	11.4	12.7	11.1	12.7	12.3	14.8	13.6	12.1	13.8	12.9	11.0	8.7	7.3
E6	Condition of dwelling <sup>2</sup>	10.7	9.5	9.4	8.8	9.3	9.8	11.8	9.4	8.3	11.2	11.0	8.1	1.8	2.4
E8(a)	Electricity payment <sup>3</sup>	19.5	18.3	19.3	17.7	17.1	16.5	21.6	19.6	18.9	20.6	19.6	14.5	6.5	8.1
E8(b)	Fuel payment <sup>3</sup>	19.0	19.3	19.4	17.1	16.5	16.0	21.2	19.5	18.7	20.2	18.9	14.2	8.9	8.0
E8(c)	Water, other service payment <sup>3</sup>	19.5	19.6	19.0	17.0	16.5	17.4	21.5	18.5	18.1	20.1	19.2	14.4	6.1	6.8
E9(a)	Rent <sup>4</sup>	14.3	15.4	18.0	14.0	14.2	12.5	15.7	14.3	14.2	14.1	14.9	14.2	4.0	3.8
E9(b)	Subsidy status <sup>4</sup>	13.9	14.8	15.8	13.4	13.8	12.3	15.2	14.1	14.2	14.1	14.5	13.2	4.1	3.6
E10(a)	Mortgage payment <sup>5</sup>	18.0	17.8	17.7	16.2	15.4	15.7	19.6	17.2	16.7	18.7	17.9	16.5	6.0	9.2
E10(b)	Property taxes included in mortgage <sup>5,6</sup>	17.2	17.4	16.6	15.0	14.2	14.8	19.0	16.2	15.0	17.9	17.3	16.7	7.8	11.6
E10(c)	Property taxes <sup>5,7</sup>	20.8	35.6	19.7	19.9	18.8	18.9	21.9	19.7	19.2	20.5	20.3	21.4	29.5	31.9
E10(d)	Value of dwelling <sup>5</sup>	21.2	22.6	21.3	21.1	20.9	19.3	22.5	20.6	20.4	21.1	20.9	21.0	12.5	16.5
E10(e)	Condominium fee <sup>5,8</sup>	22.8	32.3	64.7 <sup>9</sup>	21.5	33.7	24.4	24.2	22.6	20.3	20.5	20.5	28.0	21.7	28.3

**Note:** The imputation rates refer to the weighted proportion of records for which missing responses were replaced with acceptable values from another record, in the same geographical area and with similar characteristics. Deterministic edits are not included.

1. Imputation rate is calculated for the population of persons that could be maintainers (person aged 15 years and over who is neither an employee of Person 1 nor a member of an employee's census family).
2. Imputation rate is calculated for all private households.
3. Imputation rate is calculated for non-farm households.
4. Imputation rate is calculated for non-farm renter-households.
5. Imputation rate is calculated for non-farm owner-households.
6. Excludes households without a mortgage.
7. Excludes households with property taxes included in the mortgage.
8. Excludes households with standard ownership (not a condominium).
9. The imputation rate for E10(e), condominium fee for owner-occupied condominiums, is high for Prince Edward Island at 64.7%; however, the number of owner-occupied condominiums in this province is less than 300 – the lowest number among the provinces. Newfoundland and Labrador is the next province with the lowest number of owner-occupied condominiums – with over 2,000 owner-occupied condominium dwellings.

### Data quality notes

The [National Household Survey User Guide](#), Catalogue no. 99-001-X, describes the data quality assessments that all variables underwent. Generally, the numerous indicators used to evaluate the quality of the housing data supported the reliability of the data at the national, provincial and territorial levels, but also identified the following items.

#### Question E2 – Housing tenure:

Comparison of the homeownership rate in Alberta to that from the 2010 Survey of Labour Income Dynamics (SLID) showed the NHS rate was higher with a statistical significance (74.1% for the NHS<sup>1</sup> versus 71.4% for SLID). The national rate and the rate for other provinces were not statistically different (note: SLID does not cover the territories).

#### Question E4 – Number of rooms and bedrooms:

In dwellings where the number of rooms and bedrooms was small, a large proportion was affected by respondent errors. The respondent errors appear in the form of inconsistencies between the number of rooms and bedrooms (such as the number of rooms being equal to the number of bedrooms, which implies there were only bedrooms in the dwelling). Respondent errors could occur for any number of reasons, such as forgetting to include bedrooms in the count of rooms or erroneously counting some rooms as bedrooms. These errors were resolved during data processing using rules that ultimately chose one of the two conflicting variables and then imputed the other variable. Comparisons to other survey results support the edit rules used to resolve the inconsistencies at the national level. However, it is possible that in some instances or in small geographic areas the processed result is not consistent with the respondent's true situation. While this is true of all donor imputation results, the high proportion of data processing edits for dwellings with a small number of rooms and bedrooms increases this risk when the desired statistics is related to this specific group (dwellings with a small number of rooms and bedrooms).

The level of inconsistencies between the number of rooms and bedrooms prior to processing was similar to the level observed in the 2006 Census. About 80% of responses for one room dwellings, and 20% of responses for two room dwellings had inconsistencies prior to processing. Also, a large portion of dwellings with 0 bedrooms was also affected by data processing that was required to resolve inconsistencies. Dwellings of other room and bedroom counts were not significantly impacted by the data processing edits.

#### Question E5 – Period of construction:

The number of households in dwellings built between 1981 and 1985 were higher than expected, while the number of dwellings built between 1986 and 1990 was lower than expected. However, the number of households in dwellings built between the overall period of 1981 to 1990 was within expectations. Quality indicators did not suggest problems in the number of dwellings built during other periods of construction.

A correlation is expected between the number of dwellings built in a specific period reported by the NHS and the number of building permits reported by the [Building Permits Survey](#). After accounting for the differences in the target population and coverage of the Building Permits Survey, the data for the two surveys was consistent for all the periods of construction where data was available, except the period of 1981 to 1985 and 1986 to 1990. However, the aggregate period of 1981 to 1990 follows the expected correlation.

#### Question E6 – Condition of dwelling:

An unexpected large increase was observed in the proportion of dwellings in Nunavut that required major repairs. It was 27.7% according to the NHS. This was a large increase compared to the results for Nunavut from the 2006 Census and the 2009/2010 [Nunavut Housing Needs Survey](#) (where 20.2% and 23.0% required major repair, respectively). No other provinces or territories showed changes as large as those in Nunavut.

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1. NHS ownership rate for Alberta excludes Band Housing to make the target universe comparable to that of SLID.



In all three data sources, the need for major repair was based on the respondent's assessment. In Nunavut, the results for the 2009/2010 Nunavut Housing Needs Survey were disseminated shortly before the data collection of the 2011 National Household Survey. The 2009/2010 Nunavut Housing Needs Survey received a lot of media coverage and all households in Nunavut were included in the survey. Thus, the topic of housing needs may have influenced responses to the 2011 National Household Survey.

### **Cross-classification of housing variables**

Housing variables are often crossed with other variables in a table to analyse a subject in more depth. Data users should be aware when examining small populations, either by selecting small geographical areas or by crossing multiple variables, that the estimates will tend to have greater variability due to sampling error.

### **Further references related to data quality**

For general information on the overall content, collection, design, processing and data quality for the NHS, please refer to the [National Household Survey User Guide](#), Catalogue no. 99-001-X.

### **Comparability with other data sources**

Statistics Canada produces a range of housing data from various sources for different uses. Comparability of housing data across data sources is affected by differences in survey target populations or administrative sources, survey sampling and collection methodologies; survey objectives, question wording, format, examples and instructions; approaches to data processing; the social and political climate at the time of data collection; and other factors.

As with every survey, the quality of the 2011 NHS housing information released was evaluated internally prior to publication. The data were compared, as much as possible, with alternative data sources. The main sources of comparison were the 2006 Census of Population, the Survey of Labour Income Dynamics (SLID), and the Survey of Household Spending (SHS).

#### **2006 Census of Population**

Most of the housing information in the NHS was collected in previous long-form censuses. Over time, there have been differences in question wording, format, examples and instructions given to enumerators and respondents. The historical comparability of housing data has been affected by these factors.

Although the 2011 NHS housing questions were essentially the same as the 2006 Census housing questions, there were some differences. The differences include:

- The question on whether the dwelling was part of a condominium development was asked only to owner households in the 2006 Census. The 2011 NHS asked the question to all households, regardless of housing tenure, to have better coverage of the condominium housing stock – specifically condominium units that were renter occupied.
- The question on whether the dwelling was a residence on an agricultural operation was changed to a 'Yes/No' question in the 2011 NHS. In the 2006 Census, it was a note on the questionnaire and respondents only marked a check circle if they were a farm operator in a residence on the agricultural operation. Qualitative testing showed that respondents often missed the note in the 2006 Census; thus, the 2011 NHS version of the question was redesigned to address this issue.
- The 2011 NHS had a question to identify tenant households in subsidized dwellings. The 2006 Census had no questions on housing subsidies.

## Housing Reference Guide

In addition to differences in the above question wording between the 2006 Census and the 2011 NHS, the methodology of these two data sources was also different, which could affect comparability. For additional information on the general comparison of NHS data with Census data, please see the [National Household Survey User Guide](#), Catalogue no. 99-001-X.

### Survey of Labour Income Dynamics (SLID) and Survey of Household Spending (SHS)

SLID and SHS include questions on housing. Generally, the statistics are comparable taking into account sampling variability. However, differences in question wording, question order, collection method, target population, and reference period (resulting from different collection time within the year), means that the results are not expected to be identical. Furthermore, where differences were observed, comparisons of the SHS and SLID to the 2006 Census also showed similar differences (in both magnitude and direction) – which suggest methodological differences that have been present throughout the years. The table below contains select housing statistics at the national level for each of the surveys.

**Table 2 Selected statistics from 2011 National Household Survey, 2010 Survey of Labour Income Dynamics and 2011 Survey of Household Spending**

Selected statistics	2011 National Household Survey	2010 Survey of Labour Income Dynamics	2011 Survey of Household Spending
Number of private households in Canada	13,319,250	13,600,000 (excludes territories and reserves)	13,500,000 (excludes territories and reserves)
Percentage of owner households	69.0%	68.5%	66.8%
Percentage of dwellings requiring major repair	7.4%	7.5%	9.0%
Average owner's major payments (\$/month)	\$1,141	\$1,171	\$1,106
Average gross rent (\$/month)	\$848	\$833	\$864
Percentage of owner households that paid 30% or more of household total income towards shelter costs	18.5%	18.8%	.
Percentage of tenant households that paid 30% or more of household total income towards shelter costs	40.1%	38.3%	.

**Note:** 2010 SLID is presented for comparison because data collection occurred between January and March of 2011 for the 2010 year.

SLID and SHS also collect data on the condominium status of the dwelling. However, estimates of the proportion of condominiums based on these surveys have high sampling variability. Furthermore, SLID captures the condominium status for only owner-occupied dwellings, while SHS captures it for owner-occupied and tenant-occupied condominiums. After adjusting for differences in the target universes, the percentage of households in condominiums reported in the 2011 NHS was higher than SLID and SHS.

The Condominium status variable in the NHS is believed to be reliable based on a high level of consistency with responses from neighbouring dwellings and with the structural type of dwelling variable. The NHS had a large sampling fraction of about one in three households. As a result, multiple households in the same condominium development are likely to be included in the NHS. The presence of numerous neighbouring dwellings that indicate they are condominiums can be used to not only validate the response of the dwelling in question, but also correct for respondent error. Overall, 87.5% of the condominium dwellings in the NHS had a nearby dwelling that also reported as a condominium dwelling. Furthermore, of the remaining 12.5% of condominium dwellings, over 80% were located in multi-unit structures. Thus, the Condominium status variable in the NHS is supported by a high level of consistency with neighbouring dwellings and with the Structural type of dwelling variable.

### **Other comparable data sources**

The average value of dwelling reported by households that own their dwelling were similar to but not directly comparable to average residential prices of MLS®. The average from the National Household Survey is based on all owner-occupied dwellings and reflects the dollar amount expected by the owners if the dwellings were to be sold on the reference day, May 10, 2011, whereas the average from MLS® reflects the dollar amount in residential sales for the year. In the 2011 NHS, based on estimates from about 9 million owner households in Canada, the average amount they expected to receive if their dwellings were sold was about \$345,000. In 2011, MLS® data has an average residential sale price of \$363,116 – based on 457,305 residential sales across Canada.