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Reference Guide

Journey to Work Reference Guide



National Household Survey, 2011



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Standard symbols

The following symbols are used in Statistics Canada publications:

- . 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^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^p preliminary
- ^r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- E use with caution
- F too unreliable to be published
- * significantly different from reference category (p < 0.05)

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Definitions and concepts

The National Household Survey collects information on journey to work data including concepts such as [Place of work status](#), [Workplace location](#), [Commuting type](#), [Mode of transportation](#), [Vehicle occupancy](#), [Commuting distance](#), [Commuting duration](#), [Time leaving for work](#), [Time arriving at work](#) and commuting flows between the residence and workplace. These data are often used in conjunction with age, sex and labour and income variables to paint a picture of workers and commuters at their place of work.

The characteristics and concepts related to the journey to work appear in the [Population universe](#). These data are collected for persons aged 15 years and over in occupied private dwellings who worked at some time since January 1, 2010. Journey to work data are generally published for a subset of this group, the [Employed](#). However the data can be tabulated for many different [labour force status](#) components.

Please consult the [National Household Survey Dictionary](#), Catalogue no. 99-000-X, for more detailed information on the definition of these variables.

Users should be careful when comparing these data with other sources as there may be differences in the definitions used and how the data are collected. Please see the Section [Comparability with other data sources](#) for additional information.

Users should also be careful when interpreting results from the vehicle occupancy question, as multiple responses for the mode of transportation were not collected. As a result, estimates of passengers, as reported by drivers, and estimates of passengers, as reported by the passengers themselves, are different. For example, some drivers might report driving a passenger to a location where the passenger will then take public transit. Consequently, the passenger might report using public transit rather than being a passenger in a car, van or truck. Also, some drivers might be reporting children being dropped off to daycare or school as passengers. Therefore, in some instances, the vehicle occupancy question might not necessarily measure the number of workers sharing the ride to work.

Classifications

Data for [Workplace location](#) are available for the entire country by a number of standard geographic areas, including [provinces and territories](#), [census divisions \(CDs\)](#), and [census subdivisions \(CSDs\)](#). Details for these geographic areas may be found under the Geography universe, in the 2011 [Census Dictionary](#), Catalogue no. 98-301-X.

Workplace locations that fall within a [census metropolitan area \(CMA\)](#) and [census agglomeration \(CA\)](#) are also available for more detailed geographies including [census tracts \(CT\)](#), [dissemination areas \(DA\)](#), and [dissemination blocks \(DB\)](#) through custom requests.

Workplace locations can also be provided for most other units in the [Hierarchy of standard geographic units for dissemination](#), also found in the *Census Dictionary*, Catalogue no. 98-301-X.

Questions

Journey to work data are obtained from the information collected through questions 46 (place of work status), 47(a) (mode of transportation), 47(b) (vehicle occupancy), 48(a) (time leaving for work) and 48(b) (commuting duration) along with place of residence information.

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In addition to the variables obtained from each question, a Commuting distance variable and a Time arriving to work variable are derived from the journey to work questions.

Journey to work questions are asked of respondents aged 15 years and over in occupied private dwellings who worked at some time since January 1, 2010. However, most tables are created for a sub-universe which includes respondents who held a job (including self-employed individuals) during the week of Sunday, May 1 to Saturday, May 7, 2011, labelled the employed labour force.

For persons living in private households on Indian reserves, Indian settlements and in remote areas, data were collected using the [2011 National Household Survey Form N2 questionnaire](#). The questions asked on the Form N2 questionnaire were the same as on the Form N1 questionnaire, but the examples, where provided for place of work, were more relevant to these areas.

For more information on all the questions included in the 2011 NHS questionnaire, please refer to [Reasons why the NHS questions are asked](#).

The journey to work data available for each individual depend on his or her response provided to Question 46 on place of work status.

Refer to [Table 2.1](#) of the *National Household Survey Dictionary* for 'journey to work' data available for each place of work status.

Data and other products

Data for the 2011 National Household Survey journey to work variables were released on June 26, 2013 as part of an integrated release with labour, education and mobility variables.

The products published using 2011 NHS journey to work 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 evaluation of the journey to work variables was carried out at various levels of geography including the Canada, province and territory and census metropolitan area levels. Workplace locations were investigated at more detailed levels, such as census divisions, census subdivisions and census tracts. Evaluations carried out include examination of total imputation rates, comparison of the distribution of unedited and edited data to determine if any data bias is introduced by imputation, and finally, comparison with the 2006 Census data (2B long form).

Coding of Workplace location

The responses to the place of work and name of firm questions were used to code the workplace location. The proportion of responses done by automated coding was **69.8%**. If special codes such as invalid responses or out of scope responses are excluded, then **64.1%** of the responses that were assigned a geographic code were done by automated coding. The remaining responses were coded by coders using software designed specifically for workplace location coding. The systems included several reference files such as a postal code file, street address file, high-density industry file and place names file as well as a computerized mapping application.

Data quality indicators

Of all the quality indicators used for the evaluation, two are presented: the global non-response rate and the imputation rate by question.

- The global non-response rate combines the non-response at the household level and the non-response at the question level. It is provided for place of residence and place of work geographic areas. The global non-response rate is the key criterion that determines whether or not the NHS results will be released for a given geographic area. Information on the global non-response rate is available in the [National Household Survey User Guide](#), Catalogue no. 99-001-X and the Data Quality and Confidentiality Standards and Guidelines, Catalogue no.
- The imputation rate is the proportion of respondents who did not answer a given question or whose response is deemed invalid and for which a value was imputed. Imputation can improve data quality by reducing the gaps caused by non-response.

Global non-response rates

Global non-response rates (GNRs) are determined for each of the NHS geographic areas. Therefore, place of work geographic areas (POW) have their own global non-response rates. POW GNRs are based on the population aged 15 years and over who worked at any given time between January 2010 and May 2011 at a usual place of work or at home located in the specific place of work geographic area whereas place of residence geographic areas (POR) have global non-response rates based on the population residing in the area. Consequently, place of work geographic areas might have different global non-response rate values when compared to their equivalent place of residence geographic area. For example, the global non-response rate for the place of work census subdivision of Toronto might not be the same as the global non-response rate for the place of residence census subdivision of Toronto.

POW GNRs like POR GNRs are an estimate, not an absolute metric, and both GNR values are variable.

However, POW GNRs are more variable than POR GNRs, in precisely the same way that POW population estimates, not being calibrated to a known POW populations enumerated through the Census, will be more variable than POR population estimates, which are calibrated to known populations enumerated through the Census.

As is the case for place of residence geographic areas, data for place of work geographic areas with a global non-response rate of 50% or above will be suppressed in standard products, but will be available as a custom request. However, it is important to note that in standard products, data might be available for some place of residence geographic areas (if their global non-response rate is below 50%) but not for the equivalent place of work geographic area (if the equivalent place of work geographic area has a global non-response rate of 50% or above), and vice-versa.

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Edit and imputation

During data processing of the journey to work variables, inconsistent or missing responses were replaced with acceptable values. This is done by identifying persons in the same geographical area that have similar characteristics to the 'failed' record and then copying their values to fill in the missing or erroneous data.

[Table 1](#) shows the imputation rates for the journey to work variables. Generally, the 2011 imputation rates are twice as high as the 2006 Census (2B long form) imputation rates for the Place of work status, Workplace location and Mode of transportation questions. The vehicle occupancy, time leaving for work and commuting duration questions were not asked in 2006.

For workplace locations located within a census metropolitan area or census agglomeration, the response is either fully coded, partially coded to the census subdivision level or uncodeable. As a result, imputation is not only used to correct non-response but it is also used to complete the geography for the levels below the census subdivision when a response was partially coded.

Table 1 Imputation rates, Canada, provinces, 2011 National Household Survey, employed labour force

	Place of work status	Place of work location		Mode of transportation	Vehicle occupancy	Time leaving	Duration of trip
		All geographies	Partial imputation (below CSD)				
percentage							
Canada	11.3	13.0	6.3	12.1	13.7	15.5	14.8
Newfoundland and Labrador	11.0	13.8	4.2	11.2	13.2	15.7	14.9
Prince Edward Island	10.9	14.4	6.4	10.8	12.9	13.3	13.1
Nova Scotia	9.5	11.9	6.4	9.7	11.1	13.0	12.5
New Brunswick	10.0	13.3	7.3	10.5	12.1	13.2	12.9
Quebec	10.3	11.9	5.7	10.9	12.7	14.0	13.2
Ontario	12.3	14.0	6.3	13.1	14.8	16.9	15.9
Manitoba	9.9	11.6	5.9	10.9	12.3	13.8	13.5
Saskatchewan	9.6	10.7	7.4	10.2	11.5	13.1	13.0
Alberta	11.4	13.0	8.5	12.5	13.9	15.9	15.6
British Columbia	11.6	13.2	5.7	12.7	14.4	16.0	15.6
Yukon	9.3	12.3	5.1	9.5	9.7	12.9	13.4
Northwest Territories	2.0	5.2	7.2	2.2	6.9	7.7	5.2
Nunavut	2.7	6.2	0.0	2.5	8.9	4.5	4.5

Cross-classification of journey to work variables

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

Additional references related to data quality

For general information on the overall content, collection, design, processing and data quality for the NHS, as well as factors that may impact the quality of the NHS data such as response errors and processing errors, please refer to the [National Household Survey User Guide](#), Catalogue no. 99-001-X.

Comparability with other data sources

Many factors affect comparisons of journey to work data across these sources. Amongst other factors, comparability is affected by differences in survey target population, reference period, sampling and collection methods; question wording, questionnaire format, examples and instructions; approaches to data processing; the social and political climate at the time of data collection.

Users should be careful when comparing data from the National Household Survey with other sources as there may be differences in the definitions used and how the data are collected. Some common issues include:

- The estimated number of workers from the National Household Survey in a given geographic area may differ from the estimates derived from other sources, for example, business and establishment surveys, since companies with more than one location often report all of their workers as working at one location (e.g., head office). In addition, the National Household Survey only collects detailed information for a person's main job. Persons having more than one job are only counted at their main job.
- In the National Household Survey, work at home estimates are based on a person's main job and where they work most of the time, whereas many surveys ask respondents if they work some of their hours at home. As a result, these surveys report a much higher estimate of the work-at-home population than does the National Household Survey.
- Commuting distance is calculated as the straight-line distance between the residential block representative point and the workplace location representative point. In most cases inside census metropolitan areas or census agglomerations, this underestimates the distance travelled to work because workers seldom have a route that minimizes the distance they travel (such as a straight line) between their home and workplace. For persons working outside of census metropolitan areas and census agglomerations the commuting distance may be inflated, since the workplace location is usually coded to a single representative point for the census subdivision of work. This can affect the calculated commuting distance, particularly when the census subdivision of work has a large area.
- The National Household Survey assumes that the commute to work originates from the usual place of residence, but this may not always be the case. In some cases, respondents may be on a business trip and may have reported their place of work or mode of transportation based on where they were working during the trip. Some persons maintain a residence close to work and commute to their home on weekends.
- Students often work after school at a location near their school. As a result, the data may show unusual commutes and an unusual mode of transportation.

In order to evaluate the data collected from the National Household Survey, the journey to work findings were compared to internal data.

The primary source used for internal comparison was the 2006 Census as there are no other data sources which collect information on place of work. For place of work status and mode of transportation comparisons were made for Canada, provinces and territories, census divisions and census metropolitan areas. For workplace location, the comparisons included detailed geographies such as census subdivisions and census tracts.

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Mode of transportation and commuting duration data were also compared with the 2010 General Social Survey (GSS) on Time Use, cycle 24. The comparison was limited to those geographical areas covered both in the 2011 NHS and in the 2010 GSS sample.

For additional information, please refer to the [National Household Survey User Guide](#), Catalogue no. 99-001-X.