Census of Population Reference Guide

Labour Reference Guide

Census of Population, 2016

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Standard table 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)

Labour Reference Guide

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Definitions and concepts

The 2016 Census of Population long-form questionnaire provides information on the labour market activities of the Canadian population aged 15 and over living in private households. Persons living in institutional collective dwellings such as hospitals, nursing homes and penitentiaries; Canadian citizens living in other countries; and full-time members of the Canadian Forces stationed outside Canada are excluded. Also excluded are persons living in non-institutional collective dwellings such as work camps, hotels and motels, and student residences.

Labour data can be divided into three groups:

- Labour force status data for the 'reference week' of Sunday, May 1 to Saturday, May 7, 2016 (for example, persons who were employed, unemployed, not in the labour force, unemployment rate (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop125-eng.cfm), participation rate (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop108-eng.cfm) and employment rate (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop029-eng.cfm)).

- Job characteristics describing a person's current position or the position of the longest duration since January 1, 2015 (for example, industry, occupation and class of worker).

- Data relating to work activity in the 2015 calendar year (for example, number of weeks worked and whether mostly full time or mostly part time).

The following variables, as defined in the *Dictionary, Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/index-eng.cfm), Catalogue no. 98-301-X, have been created from the labour questions:

- Labour force status (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop057-eng.cfm)

- Labour force status (based on 1971 concepts) (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop154-eng.cfm)

- Hours worked for pay or in self-employment (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop046-eng.cfm)

- On temporary lay-off or absent from job or business (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop105-eng.cfm)

- New job to start in four weeks or less from reference week (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop098-eng.cfm)

- Looked for paid work in past four weeks (full- or part-time work) (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop062-eng.cfm)

- Reasons unable to start a job (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop114-eng.cfm)

- When last worked for pay or in self-employment (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop130-eng.cfm)

- Industry (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop181-eng.cfm) (based on the North American Industry Classification System [NAICS] 2012)

- Occupation (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop157-eng.cfm) (based on the National Occupational Classification [NOC] 2016)

- Class of worker (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop017-eng.cfm)

- Work activity during the reference year (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop224-eng.cfm)

- Weeks worked during the reference year (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop129-eng.cfm)

- Full-time or part-time weeks worked during the reference year (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop035-eng.cfm)

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 section 'Comparability with other data sources' for additional information.

Classifications

The classification for most labour variables is presented in the Definitions and concepts section in the form of response categories.

However, industry data are classified according to the North American Industry Classification System (NAICS) Canada 2012. For information on NAICS, please see North American Industry Classification System (NAICS) Canada 2012 (http://www.statcan.gc.ca/eng/subjects/standard/naics/2012/index), Catalogue no. 12-501-X.

Occupation data are classified according to the National Occupational Classification (NOC) 2016. For information on NOC, please see the National Occupational Classification (NOC) 2016 (http://www.statcan.gc.ca/eng/subjects/standard/noc/2016/index), Catalogue no. 12-583-X.

Questions

The 2016 Census of Population data on labour were obtained from Questions 30 to 41 and Questions 46 and 47 on the 2016 2A-L questionnaire (http://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=getInstrumentList&Item_Id=295122&UL=1V&). For persons living on Indian reserves and in northern and remote areas of the country, data were collected using the 2016 2A-R questionnaire (http://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=getInstrumentList&Item_Id=295299&UL=1V&).

The questions asked on the 2A-R questionnaire were the same as on the 2A-L questionnaire, but the examples, where provided for write-in responses, included industries or occupations more commonly found in the north. It should also be noted that persons living in remote, isolated parts of the provinces and territories were enumerated in February, March and April 2016. When enumeration has taken place before May 2016, the reference week used to determine labour force status is the week, Saturday to Sunday, preceding the date on which the household was enumerated.

While some labour variables are created directly from the response provided to one question, others are derived from information collected for two or more questions. Specifically:

- Labour force status (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop057-eng.cfm): derived from questions on hours worked for pay or in self-employment (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop046-eng.cfm) (Question 30), on temporary lay-off or absent from job or business (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop105-eng.cfm) (Question 31), new job to start in four weeks or less from reference week (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop098-eng.cfm) (Question 32), looked for paid work in past four weeks (full- or part-time work) (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop062-eng.cfm) (Question 33), reasons unable to start a job (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop114-eng.cfm) (Question 34) and when last worked for pay or in self-employment (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop130-eng.cfm) (Question 35).

- Class of worker (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop017-eng.cfm): derived from questions on class of worker (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop017-eng.cfm) (Question 40) and incorporation status (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop049-eng.cfm) (Question 41).

- Work activity during the reference year (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop224-eng.cfm): derived from questions on weeks worked during the reference year (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop129-eng.cfm) (Question 46) and full-time or part-time weeks worked during the reference year (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop035-eng.cfm) (Question 47).

Two variables, industry and occupation, are coded variables. Coders assigned an industry or occupation code from the write-in responses to the following questions:

- Industry (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop181-eng.cfm): coded from questions on for whom did this person work (Question 36) and the kind of business (Question 37).

- Occupation (http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/pop157-eng.cfm): coded from questions on work or occupation (Question 38) and the main activities (Question 39).

Data quality

The 2016 long-form census questionnaire underwent a thorough data quality assessment, similar to what was done for the 2011 National Household Survey (NHS) and past censuses. A number of data quality indicators (briefly described below) were produced and used to evaluate the quality of the data.

The data quality assessment was done in addition to the regular quality checks completed at key stages of the survey. For example, during data collection and processing, the consistency of the responses provided was checked and the non-response rates for each question were analysed. As well, the quality of imputed responses was examined as part of the data editing and imputation steps. Finally, long-form census questionnaire estimates were compared with other data sources, and certified for final release.

For information about data quality for the census subdivision of Wood Buffalo, the data collection methodology and the use of administrative data sources, please refer to Appendix 1.4 (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/app-ann1-4-eng.cfm) of the *Guide to the Census of Population, 2016*, Catalogue no. 98-304-X.

The main highlights of this assessment for the labour data are presented below.

Variability due to sampling and total non-response

The objective of the long-form census questionnaire is to produce estimates on various topics for a wide variety of geographies, ranging from very large areas (such as provinces and census metropolitan areas) to very small areas (such as neighbourhoods and municipalities), and for various subpopulations (such as Aboriginal peoples and immigrants) that are generally referred to as 'domains of interest.' In order to reduce response burden, the long-form census questionnaire is administered to a random sample of households.

This sampling approach and the total non-response introduce variability in the estimates that needs to be accounted for. This variability also depends on the population size and the variability of the characteristics being measured. Furthermore, the precision of estimates may vary appreciably depending on the domain or geography of interest, in particular because of the variation in response rates. For more information on the variability due to sampling and total non-response in long-form census questionnaire estimates, please refer to the *Guide to the Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/index-eng.cfm), Catalogue no. 98-304-X.

Non-response bias

Non-response bias is a potential source of error for all surveys, including the long-form census questionnaire. Non-response bias arises when the characteristics of those who participate in a survey are different from those who do not.

In general, the risk of non-response bias increases as the response rate declines. For the 2016 long-form census questionnaire, Statistics Canada adapted its collection and estimation procedures in order to mitigate, to the extent possible, the effect of non-response bias. For more information on these mitigation strategies, please refer to the *Guide to the Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/index-eng.cfm), Catalogue no. 98-304-X.

Data quality indicators

A number of quality indicators were produced and analysed during the data quality assessment of the long-form census questionnaire. Three of these are presented to users: the global non-response rate (GNR), the standard error and the imputation rate by question.

The GNR combines non-response at the household level (or total non-response) and non-response at the question level (partial non-response). It is calculated and presented for each geographic area. The GNR is the key criterion that determines whether or not the long-form census questionnaire results are released for a given geographic area – data are suppressed for geographic areas with a GNR equal to or greater than 50%. More information on the GNR is available in the *Guide to the Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/index-eng.cfm), Catalogue no. 98-304-X.

The standard error is a measure of the precision of an estimate with respect to sampling and total non-response variability. A small standard error corresponds to a precise estimate. Standard errors are made available to users for certain long-form census questionnaire estimate, except in cases where confidentiality would be compromised. The standard error can be used to derive other indicators of precision such as the coefficient of variation. It can also be used for most types of population parameters of interest (e.g., a count, a proportion or an average) and, using an adequate methodology, to derive margins of errors or confidence intervals for a given confidence level or to perform statistical inference (hypothesis testing). For more information on the long-form census questionnaire standard error and its interpretability and use, please refer to the *Guide to the Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/index-eng.cfm), Catalogue no. 98-304-X.

The imputation rate by question, excluding global non-response, is a measurement of quality specific to each question in the long-form census questionnaire. It measures the proportion of respondents ('respondents' being defined as those for whom a fully- or partially-completed questionnaire was returned) who did not answer a question, or whose response was invalid or inconsistent with another response and for which a valid value was assigned. Imputation eliminates gaps in the data and, when done appropriately, reduces bias introduced by non-response. This is done by identifying persons or households that have characteristics similar to the incomplete record and by copying their values to fill in the missing or erroneous responses. Imputation rates for each labour question are calculated by including only those for whom the questions is relevant based on age or answers provided to previous questions. The imputation rates by question are presented below.

Table 1
Imputation rates by questions, Canada, provinces and territories, Census of Population, 2016

Geography	Hours worked	Layoff/ absent	New job to start	Looking for a job	Reasons for unavail- ability	When last worked	Industry	Occupation	Class of worker	Incorpo- ration status	Weeks worked	Full time/ part time status
							percentage					
Canada	1.6	4.5	4.2	3.6	3.1	6.2	6.2	5.3	3.7	5.1	2.9	5.4
Newfoundland and Labrador	2.3	6.5	6.0	5.5	4.9	9.5	8.9	8.1	6.6	9.6	4.6	5.8
Prince Edward Island	1.9	6.5	5.9	5.0	4.5	8.7	7.6	6.9	5.5	5.6	4.2	4.5
Nova Scotia	1.6	5.0	4.6	4.0	3.4	7.3	6.4	5.7	4.3	6.2	3.1	3.8
New Brunswick	1.5	4.9	4.6	4.1	3.2	7.1	6.2	5.5	4.1	6.0	3.0	3.6
Quebec	1.4	5.1	4.8	4.0	2.6	6.9	5.3	4.4	3.6	5.4	2.6	3.1
Ontario	1.5	4.0	3.7	3.2	3.0	5.6	6.1	5.3	3.4	4.8	2.7	3.2
Manitoba	1.6	4.6	4.3	3.7	3.3	6.3	6.1	5.3	3.8	5.5	3.0	3.3
Saskatchewan	1.9	5.2	4.8	4.3	4.0	7.6	6.7	6.0	4.7	5.9	3.7	3.9
Alberta	2.0	4.5	4.1	3.7	3.3	6.1	7.0	6.0	4.2	5.4	3.6	3.9
British Columbia	1.8	4.1	3.8	3.4	3.4	5.4	6.5	5.3	3.6	4.5	3.0	3.5
Yukon	1.9	4.7	4.2	4.4	5.6	6.4	6.3	5.2	3.6	4.4	3.4	3.5
Northwest Territories	2.9	5.6	5.7	5.3	8.4	6.8	7.0	7.0	4.7	10.4	3.8	4.6
Nunavut	2.7	5.1	4.8	5.4	6.7	5.4	4.8	7.3	3.1	17.2	3.3	4.1

Source: Statistics Canada, Census of Population, 2016.

Certification of final estimates

Once data processing, editing and imputation were completed, the data were weighted in order for estimates to represent the total Canadian population living in private dwellings. Certification of the final weighted estimates was the last step in the validation process leading to recommendation for release of the data for each geography and domain of interest. Based on the analysis of data quality indicators and the comparison of the long-form census questionnaire estimates with other data sources, the recommendation is for unconditional release, conditional release or non-release for quality reasons. In the case of conditional release or non-release, appropriate notes and warnings are included in this guide. Several data sources were used to evaluate the long-form census questionnaire estimates. However, since the risk of error often increases for lower levels of geography and for smaller populations, and the data sources used to evaluate these results are less reliable (or not available) at these lower levels, it can be difficult to certify the estimates at these levels. In the case of labour data, this is particularly true for the Industry and Occupation data at the 4-digit code level.

Long-form census questionnaire estimates are also subject to confidentiality rules that ensure non-disclosure of individual respondent identity and characteristics. For more information on confidentiality rules, please refer to the *Guide to the Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/index-eng.cfm), Catalogue no. 98-304-X.

For more information on data processing and the calculation of the estimates and their level of precision, please refer to the *Sampling and Weighting Technical Report, Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-306/index-eng.cfm), Catalogue no. 98-306-X.

Comparability of concepts over time

Most labour variables can be compared over time although with some caveats described below under each concept headings.

In addition, data users should note that the 2011 National Household Survey (NHS) employed a different methodology when compared to the 2016 Census and prior censuses. These differences can affect comparability. Also, the 2016 labour imputation rates were considerably lower than the corresponding 2011 imputation rates at the national and provincial level. Data users comparing 2016 Census estimates to 2011 NHS estimates should therefore take into account the higher level of imputation of the labour data in 2011.

For more information on the comparability between the 2016 Census and the 2011 National Household Survey, please refer to the *Guide to the Census of Population, 2016* (http://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/index-eng.cfm), Catalogue no. 98-304-X and the *Labour Reference Guide, National Household Survey, 2011* (http://www12.statcan.gc.ca/nhs-enm/2011/ref/guides/99-012-x/99-012-x2011007-eng.cfm), Catalogue no. 99-012-XWE2011007.

Labour force status

The labour force status concept has remained relatively stable since the 1981 Census. The concept is derived based on response patterns to various questions. It classifies respondents as "employed," "unemployed" or "not in the labour force" and provides the employment rates, unemployment rates and participation rates.

Among the questions from which the concept is derived, only the school attendance has undergone changes impacting somewhat the comparability of the concept. Specifically, the full time and part time status of school attendance was removed in 1986 and 2006 onward, rendering slightly different estimates and rates especially for those aged 15 to 19 years old.

Industry

The industry and occupation concepts are created from classifications subject to revision every five years. Some of those revisions are minor updates whereas some are major structural changes.

During the 2016 Census, the Industry concept was classified based on the North American Industrial Classification System (NAICS) 2012. The most detailed information available for census industry data is at the 4-digit code level. Comparison with the 2011 NHS data which is based on the NAICS 2007 is possible, keeping in mind the caveats presented earlier for such comparison.

However 2011 NHS data coded to the NAICS 2007 code 7221 - Full-service restaurants and code 7222 - Limited-service eating places should be aggregated to compare with 2016 Census data coded to 7225 - Full-service restaurants and limited-service eating places (NAICS 2012). In addition, some responses pertaining to Pre-recorded tape, compact disc and record stores which were classified under the 4512 (NAICS 2007) code in 2011 were coded to various NAICS 2012 codes during the 2016 Census, albeit these responses were residual as they belong to declining industries. The majority of responses coded to the 4512 (NAICS 2007) code during the 2011 NHS were coded to the 4513 (NAICS 2012) code during the 2016 Census.

Finally, only activities pertaining to band administration were coded to 9141 - Aboriginal public administration in 2016 whereas in the past establishments engaged in health and education for the Aboriginal Peoples were also coded to 9141, thus impacting the comparability for this code.

For further information on the comparability between classifications, data users are advised to consult concordance tables at Concordances between classifications (http://www.statcan.gc.ca/eng/concepts/concordances-classifications).

Occupation

The Occupation concept was classified based on the National Occupational Classification (NOC) 2016. The most detailed information available for occupational census data is at the 4-digit code level. Comparison with the 2011 NHS data which is based on the NOC 2011 is possible; the NOC 2016 being a minor revision of NOC 2011, although data users should keep in mind the caveats presented earlier for such comparison.

In 2016, some coding strategies have been changed to harmonize the coding process with other surveys. Notably, responses of "Realtor" and "Real estate broker" were coded to 6232 - Real estate agents and salespersons but only if no evidence of management and/or supervision tasks existed. In the past, all "Realtor" and "Real estate broker" responses were coded to 0121 - Insurance, real estate and financial brokerage managers regardless of evidence of management and/or supervision. Another notable change in coding strategy is to classify responses of "Administrative assistant" with no additional description to 1242 - Legal administrative assistants or 1243 - Medical administrative assistants if evidence of legal or medical related tasks exists based on responses to the "main duties" or industry question. In the past, such responses were coded to 1241 - Administrative assistants regardless of evidence of legal or medical work environment.

As with the NAICS, data users are advised to consult NOC concordance tables when comparing classifications.

Class of worker and incorporation status

The class of worker and incorporation status concepts have remained relatively stable since the 1981 Census. The concepts classify respondents as "employee," "unpaid worker" or "self-employed." The latter can be further classified as to whether paid help is used or not and as to whether the business owned has been incorporated or not.

Work activity during the reference year

The work activity concept has remained relatively stable since the 1981 Census. The concept is derived based on questions regarding the number of weeks worked during the year preceding the census and whether these weeks were mostly worked on a full time or part time basis.

It is important to note that the number of hours defining full time and part time status has been on the questionnaire since 1991 only. Before, no operational definition of what constituted part time work was provided. It is likely that respondents were answering based on their interpretation unless they consulted the census guide. However the latter provided no guidance in 1981 and only the following statement in 1986: "Part-time work is that work which is less than the normally scheduled weekly hours of work performed by persons doing similar work."

Comparability with other data sources

Census labour data for 2016 were compared to previous census cycles results, the 2011 NHS results and when possible to the Labour Force Survey (LFS) results.

Overall 2016 Census labour data compared well with other data sources.

Labour force status

The majority of data points used in the 2016 Census comparison with 2016 LFS three-month averages showed no statistical differences for employment, unemployment and participation rates.

However, there are some disparities; the largest can be observed for the unemployment rate of those aged 65 years and over in Newfoundland and Labrador. Census results show a rate of 21.3% whereas the LFS three-month average shows a rate of 12.5%.

The second largest disparity is the unemployment rate of those aged 15 to 24 years old, again in Newfoundland and Labrador; census results show a rate of 22.9% whereas LFS three-month average results show a rate of 15.0%. A closer look at trends shows that the 2016 Census result for the unemployment rate of youth in Newfoundland and Labrador is more in line with historical LFS results for this specific sub-population.

There are a number of conceptual differences between the two surveys. Users should take into account factors such as population coverage, collection methodology, sample size and questionnaire content. More information on the comparability of the census and the Labour Force Survey is provided in the Appendix 6.1 (http://www12. statcan.gc.ca/census-recensement/2016/ref/dict/app-ann/a6_1-eng.cfm) of the *Dictionary, Census of Population, 2016*, Catalogue no. 98-301-X.

In addition to the information provided in appendix 6.1, data users should be aware that in May 2016, the reference period between the two surveys had a gap of two weeks as in 2011, whereas in earlier cycles, the gap between the reference periods was usually one week. The month of May is a strategic time of the year for youth as the academic year is at, or near, its end; job searching and hiring for the summer begins. Volatility is therefore expected from week to week.

Table 2
Employment, unemployment and participation rates by age groups, Canada, Census of Population, 2016 and Labour Force Survey (three-month average for March, April, May), 2016

Age groups	Employment		Unemployment		Participation	
	Census	**LFS**	**Census**	**LFS**	**Census**	**LFS**
15 to 24	52.3	53.6	15.4	14.1	61.8	62.4
25 to 34	79.2	80.2	7.7	7.1	85.8	86.3
35 to 44	82.1	82.2	5.7	5.9	87.1	87.4
45 to 54	80.8	81.2	5.5	5.7	85.5	86.1
55 to 64	60.8	61.5	6.5	6.7	65.1	65.9
65+	13.9	12.9	7.1	4.7	14.9	13.5
Total	**60.3**	**60.8**	**7.6**	**7.4**	**65.2**	**65.6**

Source: Statistics Canada, Census of Population, 2016 and Labour Force Survey, March, April, May, 2016.

Industry and occupation

The distribution of proportions among industrial sectors and broad occupational categories compared well between the 2016 Census and the LFS showing no statistical differences for the majority of data points. However, data users should be aware that the census coding strategy tend to overestimate the number of individuals in the management category for the occupation concept.

Table 3
Distribution of proportions for industrial sectors, Canada, Census of Population, 2016 and Labour Force Survey, May 2016, data non-adjusted for seasonality

Industrial Sectors	Census	LFS
11 Agriculture, forestry, fishing and hunting	2.4	2.0
21 Mining, quarrying, and oil and gas extraction	1.4	1.4
22 Utilities	0.8	0.8
23 Construction	7.1	7.8
31 to 33 Manufacturing	8.8	9.3
41 Wholesale trade	3.7	3.8
44 and 45 Retail trade	11.6	11.3
48 and 49 Transportation and warehousing	4.8	5.0

Table 3
Distribution of proportions for industrial sectors, Canada, Census of Population, 2016 and Labour Force Survey, May 2016, data non-adjusted for seasonality

Industrial Sectors	Census	LFS
51 Information and cultural industries	2.3	1.9
52 Finance and insurance	4.5	4.5
53 Real estate and rental and leasing	1.9	1.7
54 Professional, scientific and technical services	7.4	7.7
55 Management of companies and enterprises	0.2	0.0
56 Administrative and support, waste management and remediation services	4.3	4.4
61 Educational services	7.5	7.2
62 Health care and social assistance	12.1	12.8
71 Arts, entertainment and recreation	2.0	2.4
72 Accommodation and food services	6.9	6.7
81 Other services (except public administration)	4.5	4.2
91 Public administration	5.9	5.2
Total	**100.0**	**100.0**

Source: Statistics Canada, Census of Population, 2016 and Labour Force Survey, May 2016.

Table 4
Distribution of proportions for broad occupational categories, Census of Population, 2016 and Labour Force Survey, May 2016, data non-adjusted for seasonality

Broad occupational categories	Census	LFS
0 Management occupations	11.3	9.0
1 Business, finance and administration occupations	16.0	15.8
2 Natural and applied sciences and related occupations	7.1	7.7
3 Health occupations	7.1	7.5
4 Occupations in education, law and social, community and government services	11.7	11.2
5 Occupations in art, culture, recreation and sport	3.0	2.9
6 Sales and service occupations	23.2	24.3
7 Trades, transport and equipment operators and related occupations	14.2	14.6
8 Natural resources, agriculture and related production occupations	2.0	2.2
9 Occupations in manufacturing and utilities	4.4	4.7
Total	**100.0**	**100.0**

Source: Statistics Canada, Census of Population, 2016 and Labour Force Survey, May 2016.

Class of worker and incorporation status

Results for the class of worker variable show that, historically the proportion of employees and self-employed individuals have been relatively stable according to the Census, the NHS and the LFS. As observed in previous cycles and during the NHS, the 2016 Census self-employment rates remain lower than the LFS rates. The difference is statistically significant.

The census and the LFS use slightly different questions to collect information on class of worker and incorporation status. It is possible that some self-employed individuals declare receiving wages in the census instead of declaring "self-employment" because "wages" is the first response option, thus the lower estimate of self-employed individuals in the census.

Table 5
Distribution of proportions for class of worker, Census of Population, 2016 and Labour Force Survey, May 2016, data non-adjusted for seasonality

Class of worker	Census	LFS
Employees	87.6	84.8
Unpaid family workers	0.3	0.1
Self-employed incorporated, no paid help	2.1	3.1
Self-employed incorporated, with paid help	2.7	3.5
Self-employed unincorporated, no paid help	5.3	7.2
Self-employed unincorporated, with paid help	2.0	1.2
Total	**100.0**	**100.0**

Source: Statistics Canada, Census of Population, 2016 and Labour Force Survey, May 2016.

Work activity during the reference year

The work activity during the reference year concept is unique to census and the NHS. Overall 2016 trends compare well with historical data.

Table 6
Distribution of proportions for work activity during the reference year, Census of Population, 2016 and National Household Survey, 2011

Work activity during 2015 or 2010 (NHS)	Census	NHS
Worked before the reference year	30.3	29.8
Worked the year after the reference year	2.1	2.2
Worked 1 to 13 weeks, full time	2.2	2.1
Worked 1 to 13 weeks, part time	3.1	2.8
Worked 14 to 26 weeks, full time	3.5	3.6
Worked 14 to 26 weeks, part time	3.0	2.8
Worked 27 to 39 weeks, full time	3.2	2.9
Worked 27 to 39 weeks, part time	1.9	1.7
Worked 40 to 48 weeks, full time	9.4	8.2
Worked 40 to 48 weeks, part time	2.7	2.4
Worked 49 to 52 weeks, full time	33.6	36.1
Worked 49 to 52 weeks, part time	4.9	5.2
Total	**100.0**	**100.0**

Source: Statistics Canada, Census of Population, 2016 and National Household Survey, 2011

Data quality notes

While considerable effort is made throughout the entire process to ensure a high standard of data quality, the resulting data are subject to a certain degree of inaccuracy.

To assess the appropriateness of the 2016 Census of Population data for a user's needs, and to understand the risk involved in drawing conclusions from or making decisions on the basis of these data, users should be aware of the following data quality indicators for the labour variables.

Industry and occupation

Respondents have to provide written responses to the industry and occupation questions whereas the majority of labour questions use check boxes for response options. Written responses have to be assigned a code before loading to the collection database. Coding the industry and occupation concepts is a complex endeavour; the coding classifications used for such task contain discrete categories whereas in the workforce such discrete categories do not always exist. Furthermore, a sizable minority of respondents provide very vague responses and different response patterns are reported to describe the same kind of business or occupation, rendering the coding task even more difficult.

Most notably is the case of the industrial sector 55 - Management of companies and enterprises. The latter is difficult to code as it includes headquarter establishments. Very few headquarter employees provide responses of "headquarter" as a kind of business, the concept used to code Industry. Most tend to specify the kind of business in which the overall business is involved in, such as clothing store or insurance company. The Census uses more information such as the workplace address to code the kind of business thus identifying headquarters more readily than the LFS. However, compared to Business surveys, the census still underestimates the number of individuals working in headquarters impacting the results for the 55 - Management of companies and enterprises industrial sector.

Although, industry and occupation data are available at the 4-digit code level, there are some risk associated with this level of detail. Data users should be aware that for smaller populations, the variability of estimates increases and coding errors are more salient. Therefore, broader categories should be used if the level of details provided by the 4-digit code is not necessary for the data user.

Work activity during the reference year

The activity during the reference year variable uses the reference year of 2015 as does census income data. Consequently, many data tables present both variables. As was the case in the data from the 2006 Census and the 2011 NHS, there are inconsistencies between the presence of employment income and work activity for 2015 reported in the 2016 Census. For example, there could be workers reporting a certain number of weeks worked in 2015 without any earnings reported for that year. There could also be workers who did not report any work activity (no weeks worked) in 2015 but did have earnings in that year. Although it is possible to have pre-payment or retroactive pay of employment income and that certain types of work may be unpaid, it is uncertain if the extent of such arrangements is captured accurately in the long-form questionnaire. Moreover, some self-employed workers receive dividends instead of earnings and proxy reporting as well as respondents' inaccurate recall for the year 2015 could also be contributing factors to explain these inconsistencies.