

Catalogue no. 75-514-G
ISBN 978-0-660-06024-8

Guide to the Job Vacancy and Wage Survey: Job Vacancy Component, 2016



Release date: August 11, 2016



Statistics
Canada

Statistique
Canada

Canada

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

Email at STATCAN.infostats-infostats.STATCAN@canada.ca

Telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following toll-free numbers:

- Statistical Information Service 1-800-263-1136
- National telecommunications device for the hearing impaired 1-800-363-7629
- Fax line 1-877-287-4369

Depository Services Program

- Inquiries line 1-800-635-7943
- Fax line 1-800-565-7757

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under “Contact us” > “Standards of service to the public.”

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

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 ($p < 0.05$)

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2016

All rights reserved. Use of this publication is governed by the Statistics Canada [Open Licence Agreement](#).

An HTML version is also available.

Cette publication est aussi disponible en français.

Table of contents

Section 1: Survey description	4
Section 2: Concepts and definitions	4
2.1 Concepts and definitions of the Job Vacancy and Wage Survey – Job Vacancy Component.....	4
2.2 Questionnaire development.....	5
Section 3: Survey methodology	6
3.1 Target and survey population.....	6
3.2 Sample.....	6
Section 4: Data collection	6
Section 5: Data processing	7
5.1 Treatment of non-response.....	7
5.2 Estimation	7
Section 6: Data quality	8
6.1 Non-sampling errors	8
6.2 Sampling errors.....	8
6.3 Data quality indicators	8
6.4 Confidentiality	9
Section 7: Comparing the Job Vacancy and Wage Survey and the Job Vacancy Statistics	9
Section 8: Products and services	10
8.1 General inquiries	10
Appendix A	11
List of economic regions and Standard Geographical Classification codes by province and territory.....	11
Appendix B	13
Note regarding the estimates for the first quarter of 2015.....	13

Guide to the Job Vacancy and Wage Survey: Job Vacancy Component, 2016

1. Survey description

The Job Vacancy Component of the [Job Vacancy and Wage Survey \(JVWS\)](#) collects information on the number of job vacancies by occupation for all economic regions on a quarterly basis. Additional information is also available by occupation, such as the average offered hourly wage, the proportion of job vacancies in full- and part-time positions, the duration of job vacancies, and the level of education and experience sought for the job. This information will be useful in identifying labour market pressures in certain regions and occupations in Canada. Detailed information is collected about each vacancy to get a comprehensive picture of the unmet labour demand in Canada.

2. Concepts and definitions

2.1 Concepts and definitions of the Job Vacancy and Wage Survey – Job Vacancy Component

This section provides users with definitions of the terms and variables associated with the survey.

Average offered hourly wage: The average hourly wage offered by employers for vacant positions. It **excludes** overtime, tips, commissions and bonuses. Salaries are converted to hourly wages based on information regarding the salary frequency and the expected average number of hours worked per week. The offered wage may be different from the actual wage paid once the position is filled.

If the salary is different among the job vacancies for the same occupation, the respondent is asked to report the lowest wage or salary. When the compensation advertised for the job vacancy is in the form of a salary range or an hourly pay range, the respondent is asked to report the lowest value of the range. If the work will be paid based on, for example, the number of parts produced, mileage or the number of times a task is performed, the respondent is asked to report the expected minimum salary.

Duration of job vacancy: Number of days the job has been vacant. In the context of the JVWS, it refers to the number of days of active recruitment.

Economic region: An economic region (ER) is a grouping of complete census divisions (with one exception in Ontario) created as a standard geographic unit for analysis of regional economic activity. Canada has 76 ERs. ERs are classified in accordance with the [Standard Geographical Classification 2011](#). A list of ERs and Standard Geographical Classification codes by province is available in **Appendix A**.

Employees or payroll employees: The 'employee' concept used in the JVWS is comprised of full-time employees, part-time employees, as well as permanent, casual, temporary, and seasonal employees. It also includes working owners, directors, partners, and other officers of incorporated businesses, as well as employees who work at home or on the road but report to the location.

The 'employee' concept used in the JVWS is meant to exclude owners or partners of unincorporated businesses and professional practices, the self-employed, subcontractors, external consultants, unpaid family workers, persons working outside Canada, and military personnel. It also excludes employees on unpaid leave, such as those on extended sick leave who are receiving insurance benefits. JVWS employment estimates are calibrated to correspond to the employment estimates from the [Survey of Employment, Payrolls and Hours \(SEPH\)](#).

Industry: General nature of the activity carried out by the location as defined by the [North American Industry Classification System \(NAICS\) 2012](#). This information is taken from the Business Register, a database containing the complete list of all active businesses in Canada that have a Canadian income tax account, are employers, or have a Goods and Services Tax account. Survey respondents are also asked to confirm the industry in which their business operates during the survey.

Job vacancies: A job is vacant if it meets the following conditions:

- it is vacant on the reference date (first day of the month) or will become vacant during the month;
- there are tasks to be carried out during the month for the job in question; and
- the employer is actively seeking a worker outside the organization to fill the job.

The jobs could be full-time, part-time, permanent, temporary, casual, or seasonal. Jobs reserved for subcontractors, external consultants, or other workers who are not considered employees, are excluded (see **Employees or payroll employees**).

Job vacancy rate: The number of job vacancies expressed as a percentage of labour demand; e.g., all occupied and vacant jobs.

Labour demand: The sum of employed individuals (met labour demand) and the number of job vacancies (unmet labour demand).

Level of education sought: Minimum level of education sought for the job. It includes a category that covers jobs for which there is no educational requirement.

Level of experience sought: Minimum number of years of experience sought for the job.

Location: A statistical unit, defined as a production unit at a single geographical location, at or from which economic activity is conducted, and for which at least employment data are available.

Occupation: Designates the type of work that must be carried out, based on the job title and on the key activities or functions associated with the job vacancy(ies). Occupations are classified according to the [National Occupational Classification \(NOC\) 2011](#).

The NOC 2011 is a four-tiered hierarchical structure of occupational groups with successive levels of disaggregation. These levels are broad occupational categories (10), major groups (40), minor groups (140), and unit groups (500).

Professional certification: Designation granted that attests to the person's ability to perform a job or task. Usually, certification is granted if the candidate passes an exam that tests the required knowledge and skills for a job. A certification is generally granted by a certifying agency or a professional association.

Quarterly estimates: For the JVWS, 100,000 locations are sampled for the quarter and collected over three months. The number of job vacancies is a stock (or a count) of distinct vacancies over three months and is not a weighted average of monthly estimates. Users should not disaggregate the estimates to monthly figures as the sample is designed to be representative of the quarter.

Recruitment strategies: Methods used by the employer to fill the job vacancy.

Type of position: Vacant jobs are classified as permanent, temporary or seasonal.

- A **permanent** job is one that is expected to last as long as the employee wants it, given that business conditions permit. That is, there is no pre-determined termination date.
- A **temporary** job has a predetermined end date, or will end as soon as a specified project is completed. Some temporary jobs are **seasonal** when they are linked to a recurring event (e.g. public holidays) or time of the year (e.g. summertime).

Type of work: Job vacancies are either for part-time or full-time work.

A full-time job is a job requiring 30 or more hours of work per week, while a part-time job is a job requiring less than 30 hours of work per week.

2.2 Questionnaire development

The content and concepts of the questionnaire were developed through consultations with Employment and Social Development Canada. Qualitative testing took place through a series of interviews in both English and French conducted by Statistics Canada's Questionnaire Design Resource Centre. In these interviews, participants were asked for their comments about the terminology, the concepts, the appearance of the electronic questionnaire screens, and the ease of providing information.

Statistics Canada's Business Payrolls Survey and job vacancy surveys used in other countries were also used as information sources in developing the survey's content.

3. Survey methodology

3.1 Target and survey population

The JVWS target population includes all locations in Canada, excluding religious organizations (NAICS 8131), private households (NAICS 814), and federal, provincial and territorial, as well as international and other extra-territorial public administrations (NAICS 911, 912 and 919). Although federal, provincial and territorial public administrations are presently excluded, they will be phased into the survey at a later date.

The JVWS survey population comes from the [Business Register \(BR\)](#) of the Statistical Registers and Geography Division at Statistics Canada. The BR is updated continuously using data from various surveys, business profiling and administrative data.

In addition to the industry exclusions mentioned earlier, the survey population also excludes locations that have not reported any payroll deductions for a period of more than 17 months, locations not eligible for sampling, and new locations for which the industry or economic region is missing in the BR. In addition, locations with only one employee have been excluded from the survey population to reduce the response burden on small businesses.

Given that the SEPH and the JVWS target populations are very similar, employment estimates produced from the JVWS survey population data have been calibrated to ensure they correspond to those from the SEPH. Data calibration improves the reliability of the estimates (see the sub-section entitled **Estimation**).

3.2 Sample

The JVWS is a sample survey with a cross-sectional design. The sample is selected from a survey population of close to 900,000 locations.

The survey is conducted on a quarterly sample of 100,000 locations.¹ Starting in 2017, part of the sample will be replaced each quarter. With the exception of certain locations which are in sample on a permanent basis due to their unique characteristics, most sampled locations will remain in the sample for two years or eight quarters. Note that locations that were part of the 2015 and 2016 sample may remain in the sample for over two years, as the rotating out of locations is done gradually. Every three months, the JVWS sampling frame is updated to reflect new locations added to the BR and to eliminate those that no longer exist.

The JVWS sample is stratified by industry (at the two-digit NAICS level), geography (economic region) and size (number of employees per location). A power allocation method is used to determine the sample size in each stratum. The stratification and the power allocation method ensure the quality of the estimates for large and small regions and industries, as well as a better representation of all occupations.

4. Data collection

The JVWS is a mandatory survey. Data are obtained directly from respondents using an electronic questionnaire. An invitation to complete the electronic questionnaire is sent by email to respondents with an electronic address on file. Selected businesses with no electronic address on file receive a letter inviting them to complete the electronic questionnaire. A hard copy of the questionnaire is available to respondents unable to complete the electronic version. In addition, alternate modes of collection, such as electronic spreadsheets, may be used to accommodate respondents with a large number of vacancies. The quarterly sample is divided into three distinct monthly groups each having the first day of the month as the reference period. This allows a better measure of the job vacancies throughout the quarter. Respondents are asked to provide the information based on the situation in effect at their location on the first day of the month (reference date).

1. Estimates for the first quarter of 2015 come from a sample of about 67,000 locations obtained from the regular quarterly sample. See **Appendix B** for more information regarding the estimates for the first quarter of 2015.

Prior to the beginning of the collection period, telephone contact is made with a subset of locations to collect their contact information and to verify coverage. During collection, follow-up is made by computer-assisted telephone interview (CATI) in cases of non-response, and with locations that have reported being out of scope for the survey. During the collection period, reminders are sent to locations that have not yet completed the questionnaire, and, after three electronic reminders, follow-up calls are made to collect the data.

The questionnaire can be found using the [following link](#).

The following information is confirmed by the respondent:

- The legal and operating name of the location;
- The name and contact information of the contact person;
- The number of employees at the location; and
- The location's main activity sector (NAICS).

The following information is collected from the respondent:

- The number of job vacancies for each occupation at the location;
- The full-time/part-time distribution of the vacant job(s) in each occupation;
- The permanent/temporary distribution of the vacant job(s) in each occupation;
- The number of seasonal job vacancies in each occupation;
- The wage offered for full-time and part-time vacant job(s) in each occupation;
- The number of days that the job(s) has (have) been vacant;
- The minimum level of education sought for the vacant job(s);
- The professional certification required for the vacant job(s);
- The minimum level of experience sought for the vacant job(s); and
- The recruitment strategies to fill the vacant job(s).

5. Data processing

5.1 Treatment of non-response

There are two types of non-response, which are treated differently for this survey:

- Total (or unit) non-response: when the respondent does not respond to any of the survey questions;
- Partial (or item) non-response: when the respondent responds to only certain survey questions.

Total non-response is handled by adjusting the weight (or reweighting) of the responding units to reflect all of the non-responding units.

In the case of partial non-response, imputation is used to fill in information not provided by the respondent. Imputation makes it possible to have a complete set of data if one cannot collect it during the collection period. A donor approach is used, where auxiliary information on the sampling frame is used to identify a donor (a responding unit) that has characteristics similar to that of the location with partial data. The missing data of the respondent with partial information are then replaced by data of the donor.

5.2 Estimation

Estimating the characteristics of a population from a survey is based on the assumption that each sampled location represents a certain number of non-sampled locations in the population. An initial weight is assigned to each record to indicate the number of units in the population represented by that location in the sample. Large or otherwise unique locations are assigned a weight of one to ensure that they only represent themselves.

Two adjustments are made to the initial weights to improve the reliability of the estimates. First, the initial weights are adjusted to compensate for total or almost total non-response. The weights adjusted for non-response are then calibrated to benchmark the employment estimates onto employment totals from administrative sources provided by the SEPH. This calibration ensures coherence between the JWWS and SEPH employment totals by province and industrial sector (two-digit level in the NAICS classification system) combined, with the exception of Prince Edward Island, where the calibration is by province alone. Similarly, the calibration for the territories is by territory alone.

6. Data quality

The estimates obtained from sample surveys are subject to both sampling and non-sampling errors.

6.1 Non-sampling errors

Non-sampling errors may occur throughout a survey for many reasons, such as non-response, coverage and classification errors (see the sub-section entitled **Undercoverage**), differences in the interpretation of the question, incorrect information from respondents, as well as mistakes during data capture, coding, and processing. Efforts to reduce non-sampling errors include careful design of questionnaires, editing of data, follow-up, imputation for non-responding units, and thorough control of processing operations.

The JWWS has a quality-control program that is applied to data capture, business structure updating and data editing stages to minimize non-sampling errors. This program monitors and controls the completeness, accuracy and consistency of the reported data. Follow-up procedures are in place for non-response.

6.1.1 Undercoverage

The use of sampling frames results in coverage errors, notably undercoverage. Undercoverage occurs when the information on a location is incomplete in the Business Register. This normally happens in the case of new locations that have not yet filed payroll deduction forms with the Canada Revenue Agency.

6.2 Sampling errors

Sampling errors occur because observations are obtained from a sample rather than from the entire population. Estimates based on a sample can differ from statistics that would have been obtained if a complete census had been taken using the same instructions, interviewers and processing techniques. This difference is called the sampling error of the estimate.

6.3 Data quality indicators

The true sampling error is unknown. However, it can be estimated from the sample itself by using a statistical measure called the standard error. The standard error can be used to build a confidence interval for the estimate. When the standard error is expressed as a percentage of the estimate, it is known as the relative standard error or the coefficient of variation (CV).

Most of the JWWS data points have their own data quality indicator. Estimates are assigned a letter to indicate their quality level. The indicators take into account various factors that affect the quality of the data, notably the CV, the non-response errors, and the imputation errors. These indicators are updated each quarter to reflect the current estimate of quality for individual data points.

The response rate of the Job Vacancy Component of the survey tends to be about 80%.

Users are encouraged to take into account the quality indicators when using the JWWS data.

As shown in Table 1, the quality indicators are:

- A – Excellent;
- B – Very good;
- C – Good;
- D – Acceptable;
- E – Use with caution;
- F – Too unreliable to be published.

Table 1
Quality indicators for JWVS estimates^{1,2}

Coefficient of variation	Quality indicators
0% to 4.99%	A
5% to 9.99%	B
10% to 14.99%	C
15% to 24.99%	D
25% to 34.99%	E
35% or more, or when there is an insufficient number of contributors	F

1. Except for estimates from the first quarter of 2015. See **Appendix B** for quality indicators by variable for data from the first quarter of 2015.

2. Estimates of employment and number of vacancies can have a large spread (e.g. a large difference between the maximum and minimum value) relative to other variables in the JWVS. Variables with a large spread tend to have lower quality.

Source: Statistics Canada, the Job Vacancy and Wage Survey, 2016.

6.4 Confidentiality

Statistics Canada is prohibited, by law, from releasing any data that would divulge information obtained under the *Statistics Act*, which relates to any identifiable person, business or organization without their prior knowledge or written consent. Various confidentiality rules are applied to all data that are released or published to prevent the publication or disclosure of any information deemed confidential. If necessary, data are suppressed to prevent direct or residual disclosure of identifiable data.

The results of the JWVS are reviewed using the appropriate security measures complying with the *Statistics Act* to assure the safeguarding of the respondent's information and to ensure no enterprise may be identified through the release of the estimates.

7. Comparing the Job Vacancy and Wage Survey and the Job Vacancy Statistics

Statistics Canada has two measures of job vacancy levels and rates: the Job Vacancy and Wage Survey (JVWS) and the Job Vacancy Statistics (JVS), which obtains much of its data from the Business Payrolls Survey.²

Some methodological differences exist between the JVWS and the JVS. The main methodological differences are described in Table 2. Users are encouraged to take these into account when comparing data from the two sources.

2. The Business Payrolls Survey (BPS) is the collection instrument for the Survey of Employment, Payrolls and Hours (SEPH, record number 2612). The results of the BPS and administrative data are combined to produce the SEPH estimates.

Table 2
Comparison of the Job Vacancy and Wage Survey (JVWS) and the Job Vacancy Statistics (JVS)

Comparison by:	JVWS	JVS
Population	All businesses, excluding: <ul style="list-style-type: none"> • private household services; • religious organizations; • provincial, territorial and federal public administration; and • international and other extraterritorial public administration. 	All businesses, excluding: <ul style="list-style-type: none"> • private household services; • religious organizations; • provincial, territorial and federal public administration; • international and other extraterritorial public administration; and • businesses primarily involved in agriculture, fishing and trapping.
Sample size	The JVWS surveys approximately 100,000 locations quarterly (about 33,000 per month).	The JVS uses the Business Payrolls Survey (BPS) as its main data collection vehicle. The BPS surveys approximately 15,000 establishments monthly.
Sampling unit	Location level <ul style="list-style-type: none"> • e.g., the individual business location (store or restaurant) is generally surveyed. 	Establishment level <ul style="list-style-type: none"> • An establishment can represent a group of locations. • e.g., for a large retailer or restaurant chain, the head office is generally surveyed.
Respondents	The respondent to the JVWS is more likely to be directly responsible for human resources.	The respondent to the BPS is more likely to be responsible for the payroll of the company.
Job vacancy concept	The number of vacant jobs on the first day of the month and those that will become vacant during the month. A job is vacant if it meets the following conditions: <ul style="list-style-type: none"> • it is vacant on the reference date (first day of the month) or will become vacant during the month; • there are tasks to be carried out during the month for the job in question; and • the employer is actively seeking a worker outside the organization to fill the job. 	The number of vacant jobs on the last day of the month, since this is the reference period of the Business Payrolls Survey. A job is vacant if it meets all three of the following conditions: <ul style="list-style-type: none"> • a specific position exists; • work could start within 30 days; and • the employer is actively seeking a worker from outside the organization to fill the position.

Source: Statistics Canada, Job Vacancy Statistics and the Job Vacancy and Wage Survey, 2016.

8. Products and services

8.1 General inquiries

For inquiries on available data tables, contact Statistics Canada's Statistical Information Service (toll-free) 1-800-263-1136; international 1-514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca.

Appendix A

List of economic regions and Standard Geographical Classification codes by province and territory

Newfoundland and Labrador	10
Avalon Peninsula	1010
South Coast–Burin Peninsula	1020
West Coast–Northern Peninsula–Labrador	1030
Notre Dame–Central Bonavista Bay	1040
Prince Edward Island	11
Prince Edward Island	1110
Nova Scotia	12
Cape Breton	1210
North Shore	1220
Annapolis Valley	1230
Southern	1240
Halifax	1250
New Brunswick	13
Campbellton–Miramichi	1310
Moncton–Richibucto	1320
Saint John–St. Stephen	1330
Fredericton–Oromocto	1340
Edmundston–Woodstock	1350
Quebec	24
Gaspésie–Îles-de-la-Madeleine	2410
Bas-Saint-Laurent	2415
Capitale-Nationale	2420
Chaudière-Appalaches	2425
Estrie	2430
Centre-du-Québec	2433
Montérégie	2435
Montréal	2440
Laval	2445
Lanaudière	2450
Laurentides	2455
Outaouais	2460
Abitibi-Témiscamingue	2465
Mauricie	2470
Saguenay–Lac-Saint-Jean	2475
Côte-Nord	2480
Nord-du-Québec	2490

List of economic regions and Standard Geographical Classification codes by province and territory (continued)

Ontario	35
Ottawa	3510
Kingston–Pembroke	3515
Muskoka–Kawarthas	3520
Toronto	3530
Kitchener–Waterloo–Barrie	3540
Hamilton–Niagara Peninsula	3550
London	3560
Windsor–Sarnia	3570
Stratford–Bruce Peninsula	3580
Northeast	3590
Northwest	3595
Manitoba	46
Southeast	4610
South Central	4620
Southwest	4630
North Central	4640
Winnipeg	4650
Interlake	4660
Parklands	4670
Northern	4680
Saskatchewan	47
Regina–Moose Mountain	4710
Swift Current–Moose Jaw	4720
Saskatoon–Biggar	4730
Yorkton–Melville	4740
Prince Albert	4750
Northern	4760
Alberta	48
Lethbridge–Medicine Hat	4810
Camrose–Drumheller	4820
Calgary	4830
Banff–Jasper–Rocky Mountain House	4840
Red Deer	4850
Edmonton	4860
Athabasca–Grande Prairie–Peace River	4870
Wood Buffalo–Cold Lake	4880
British Columbia	59
Vancouver Island and Coast	5910
Lower Mainland–Southwest	5920
Thompson–Okanagan	5930
Kootenay	5940
Cariboo	5950
North Coast	5960
Nechako	5970
Northeast	5980

List of economic regions and Standard Geographical Classification codes by province and territory (concluded)

Yukon	60
Yukon	6010
Northwest Territories	61
Northwest Territories	6110
Nunavut	62
Nunavut	6210

Appendix B

Note regarding the estimates for the first quarter of 2015

Estimates for the first quarter of 2015 come from a sample of about 67,000 locations obtained from the regular quarterly sample, or two-thirds of the regular sample. Since only two thirds of the sample, corresponding to February and March, were collected, estimates for the first quarter of 2015 are subject to higher sampling variability. As a result, comparisons of the first quarter of 2015 data with data from subsequent quarters should be made with caution.

The response rate for the two collection months of the first quarter of 2015 was 66.8%. However, since only two thirds of the sample was collected, the effective response rate is 44.1%. The effective response rate has an impact on data accuracy and consequently on the quality indicators of the first quarter of 2015 data.

To account for the missing sample units, the quality indicators for all variables, with the exception of payroll employment, have been lowered.

Table 3
Quality indicators by variable for data from the first quarter of 2015

Coefficient of variation	Variable	
	Payroll employment	Other variables (e.g. job vacancies, job vacancy rates, average offered hourly wage)
0% to 4.99%	A	C
5% to 9.99%	B	D
10% to 14.99%	C	E
15% to 24.99%	D	E
25% to 34.99%	E	E
35% or more	F	F

Source: Statistics Canada, the Job Vacancy and Wage Survey, 2016.