Study: Attacks on Public Sector Workers Target Women's Wages

The Alberta Federation of Labour engaged LivingWork Consultants to examine census data for what it tells us about wages in the public and private sector.

Far from finding Alberta public sector workers enjoying cushy pay packages, Alberta public sector workers earn, on average, 2% than private sector workers.

There is one group that does earn slightly more in the public sector than the private sector, and that's women, especially in lower-wage occupations like filing clerks, cooks, cleaners, and caretakers.

Women are the vast majority of public sector workers in Alberta.

The study found:

- Alberta's hot economy has fueled private-sector wage growth faster than public sector wages. Census data shows Alberta public sector workers earn on average 2% less than private sector workers.

- When comparing occupations for over 92,000 full time workers doing similar work in the public and private sectors, Alberta's average annual public sector wage was estimated at $49,064, compared to an average of $50,077 for Alberta workers in the private sector.

- The wage difference for women were much more comparable between the two sectors, as women working in the public sector showed a 0.5% wage advantage over comparable occupations in the private sector.

- For the majority of occupations in the lower tiers of annual income - $25,000 - $40,000 - women in the public sector enjoy superior pay to those in the private sector.

- The majority of public sector workers are women. Women working full-time in Alberta earn less than men across the economy, but the pay differential is less than in the private sector. Still, large earnings gaps for women working in education, government services, and health care persist. Attacks on women's wages in the public sector exacerbate inequality.

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Top 10 occupations where women earn more in the public sector — largest pay differentials for the public sector makes a difference

Female	Average Public Sector Wage	Average Private Sector Wage	Percentage Difference Public Sector Workers Earn More Than Private Sector
G412 Cooks	$30,476	$23,563	22.7%
G961 Food counter attendants, kitchen helpers & related occupations	$22,280	$17,666	20.7%
G931 Light duty cleaners	$25,382	$21,004	17.2%
D032 Dietitians and nutritionists	$73,178	$62,885	14.1%
D313 Other assisting occupations in support of health services	$60,801	$52,249	14.1%
G933 Janitors, caretakers and building superintendents	$36,169	$31,140	13.9%
D215 Medical radiation technologists	$30,685	$26,474	13.7%
G942 Bakers	$66,175	$57,179	13.6%
D216 Medical sonographers	$51,923	$44,875	13.6%
B513 Records management and filing clerks	$65,009	$56,412	13.2%

Who works where: women are the majority of our public sector workers; attacks on the public sector are attacks on women

- 57% of Education Services workers in the public sector are women. Women who work full-time in public sector education services earn 79% of what men earn.

- 75% of Provincial Government workers are women. Women who work full-time in the provincial government sector earn 69% of what men earn.

- 90% of Alberta's public sector Health Care and Social Services workers are women. Women who work full-time in Alberta's public health care and social services sector earn 82% of what men earn.

Sector	Gender	Number of Public Sector Workers	Average Public Sector Wage
Education Services	Female	8,455	44,718
Education Services	Male	6,450	56,806
	Total	14,905	49,949
Provincial Government	Female	7,335	49,075
Provincial Government	Male	2,460	71,567
	Total	9,795	54,723
Health Care and Social Service	Female	40,490	44,970
Health Care and Social Service	Male	4,605	54,829
	Total	45,095	45,977

Study methodology
Notes on data sources, samples, and quality
By Livingwork Consultants

The objective of this study was to produce a series of robust and reliable estimates of average annual wages for workers in similar occupation that are classified into either the private or public sectors.

Data sources and sample

The study used a custom dataset created by Statistics Canada from the 2006 Census using data from the long-form census, which was filled in by 20 per cent (over 1.9 million) Canadian households. Data was provided for the number of workers and annual wages of those who worked full-time, full-year, classified by detailed occupational group (520 different specific occupations at the 4-digit level using the 2006 National Occupational Classification), by industry, sex, age and region.

The custom dataset was obtained by the Canadian Union of Public Employees. Special thanks to CUPE National – especially CUPE economist Toby Sanger – for obtaining the data.

Statistical data on the standard error and median wages was also obtained. Data was obtained at the national and provincial level and for ten large major cities.

These records represent annual earnings for employees who worked full-time, full-year: those who worked for 30 or more hours a week and for 49 or more weeks per year. Those identified as self-employed were excluded as they represent a very diverse group: both owners of companies and individual contractors or consultants. Some may work in the public sector, but they aren't properly considered "public sector employees."

As the Census data were not categorized by whether the employer was considered public or private, we obtained data for the predominant public sector industries from Statistics Canada (using the same approach employed for the CFIB Wage Watch study).

These include:

- Federal public administration
- (NAICS 911, 914, 919)
- Provincial public administration (NAICS 912)
- Local and municipal public administration (NAICS 913)
- Public health care and social services
- (NAICS 622, 623, 624)
- Education services (NAICS 610)
- Public Sector: above, plus urban transit
- (NAICS 4851) and Postal Services (NAICS 4911)

Private Sector: all other industry sectors. A limited number of occupations that are unique to the public sector were excluded in advance of other analysis. These included police officers, firefighters, armed forces officers, correctional service officers, teachers, professors, principals, letter carriers, government managers and elected officials.

These occupations were similarly excluded in the 2009 study by the Canadian Federation of Independent Business.

Given that the survey data comes from a large sample of workers, the objective of the statistical methods focused on minimizing both the sampling and non-sampling errors used in the methods to produce these estimates.

Data quality and outlier detection

Additional care must be taken with the raw Census data because they are self-reported and, as with all data, often include classification, coding and inputting errors. In addition, the method of constructing public and private sector classifications based on industry codes means a proportion of these individuals are misrepresented. Typically an error rate of five percent should be expected for non-sampling errors.

The data were filtered to remove occupational categories by sex and age where the average wage was 30 per cent or higher for either the public or private sectors. While the 4-digit NOCs code provides the highest level of detail available, these levels of wage differences may signify that these occupational groups may be sufficiently different. This approach was recommended by the federal Treasury Board and also used in the CFIB Wage Watch study.

Outliers and non-comparable occupations were further filtered by eliminating those where there were less than 25 individuals employed and where either the public or private sector comprised less than 2.5 per cent of total employment for this occupational group.

Sampling errors

To ensure data reliability and integrity, occupational groups with a high level of wage dispersion—where the "standard error" is more than 30 per cent of the average wage—were also excluded. This represents estimated errors based on the fact that the sample data isn't identical to underlying population.

These are standard statistical methods widely used to determine whether data used comes from sample large enough to be considered reliable and representative of the underlying population.27 The standard error is calculated as the square root of the average, taken over all possible samples of the same size and design, of the squared deviation of the sample estimate from the value for the total population.

In statistical terms, there's a 99 per cent confidence level that the true value of a sample lies within plus or minus three times its standard error. Plus or minus two times the standard error provides a 95 per cent confidence level, similar to the "19 times out of 20" probability reported in opinion polls.

For smaller samples - such as those representing smaller provinces or cities with smaller occupational counts - the standard error will be relatively large in relation to the sample.

Calculation of average wages

Total and average wages for each group were calculated in a straightforward manner by aggregating the number of workers in each subcategory multiplied by their average wage. Analysis and aggregation was done by detailed occupation, gender and age group.

The statistical tests we applied demonstrate the data filtering used in this analysis was rigorous enough to provide statistically robust results at the levels presented.