Study: Women in scientific occupations in Canada, 1991 to 2011

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In 2011, women represented less than one in four (23%) workers in university-level scientific occupations, compared with nearly two-thirds (65%) of workers in university-level non-scientific occupations.

The relatively low proportion of women in scientific occupations was due to the fact that there were fewer women in occupations related to computer science. In 2011, computer science accounted for nearly one-half of all workers in scientific occupations normally requiring a university degree.

These findings are reported in a new study, "Women in scientific occupations in Canada," which provides information on the scientific occupations of working women aged 25 to 64.

Although the study discusses both college-level and university-level occupations, the results presented in this release are based on occupations that normally require a university degree.

University-level scientific occupations comprise those in engineering, physical and life sciences, architecture, urban planning and land surveying, mathematics, statistics and actuarial science, and computer science.

Share of women in scientific occupations increases

From 1991 to 2011, the proportion of women in scientific occupations requiring a university education rose from 18% to 23%, while the share of women in non-scientific jobs increased from 59% to 65%.

The proportion of women was up in all categories of scientific occupations, except computer science.

In life science occupations, for example, the share of women rose from 23% in 1991 to 43% in 2011. Similarly, the proportion of women increased from 18% to 31% in physical science occupations, and from 38% to 50% in mathematics, statistics and actuarial science occupations.

The proportion of women also increased in engineering occupations, but remained low compared with other occupational categories. For instance, in 2011, women accounted for 13% of civil, mechanical, electrical and chemical engineers, more than double the 6% reported in 1991.

However, the proportion of women in computer science occupations declined from 30% in 1991 to 25% in 2011.

Women contribute less to the growth in computer science occupations

From 1991 to 2011, the number of workers in university-level scientific occupations increased 304,000 in Canada.

Computer science occupations contributed the most to the gain during the period, up 184,000, representing 60% of the overall growth in university-level scientific workers.

Women (22%) accounted for a relatively low portion of the increase in computer science occupations, while men (78%) accounted for the majority of the rise.

The women who contributed to the growth in computer science occupations were more likely to be aged 35 to 54 and more likely to be immigrants.

In fact, from 1991 to 2011, the number of workers in computer science jobs declined by about 4,000 among women aged 25 to 34, while it increased by more than 25,000 among men in the same age group.

In addition, immigrants accounted for 55% of the growth in the number of female computer scientists aged 25 to 64 over the period.

Better job conditions in scientific occupations

Among workers in occupations that normally require a university education, scientific occupations were generally associated with better job conditions than non-scientific occupations.

For instance, women in scientific occupations (93%) were more likely to have a permanent job than their counterparts in non-scientific occupations (87%). They were also more likely to work full time (97% versus 85%) and to earn higher average hourly wages.

There were similar results for men in scientific occupations.

However, men aged 25 to 64 working full time in scientific occupations earned hourly wages that were, on average, about 9% higher than those of their female counterparts.

Among workers aged 25 to 34 in scientific occupations, men earned approximately 8% more than their female counterparts. This compared with a wage gap of about 6% among workers of the same age group in non-scientific occupations.

Note to readers

This study uses data from the 2011 National Household Survey (NHS) and from the 1991 and 2001 censuses. The information on job characteristics is based on data from the Labour Force Survey (LFS) from 2010 to 2015.

Similar occupational categories can be created with the NHS and censuses on the basis of the 2006 National Occupational Classification (NOC 2006). LFS data are based on the 2011 National Occupational Classification (NOC 2011), which differs little from the 2006 NOC in terms of scientific occupations.

With the NOC 2006 and 2011, occupations can be assigned based on the skill level normally required to hold the occupation. Occupations associated with natural and applied sciences (scientific occupations) were divided into two groups based on whether they required (a) a university degree or (b) a college diploma, and were compared with non-scientific occupations requiring a comparable skill level. Management occupations were excluded from this analysis.

Definitions, data sources and methods: survey numbers 3701, 3901 and 5178.

The article, "Women in scientific occupations in Canada," is now available in *Insights on Canadian Society* (**75-006-X**), from the *Browse by key resource* module of our website, under *Publications*.

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; **STATCAN.infostats-infostats.STATCAN@canada.ca**) or Media Relations (613-951-4636; **STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca**).

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