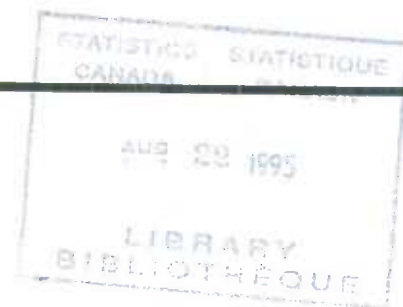


General Social Survey



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COMPUTER USE IN THE WORKPLACE

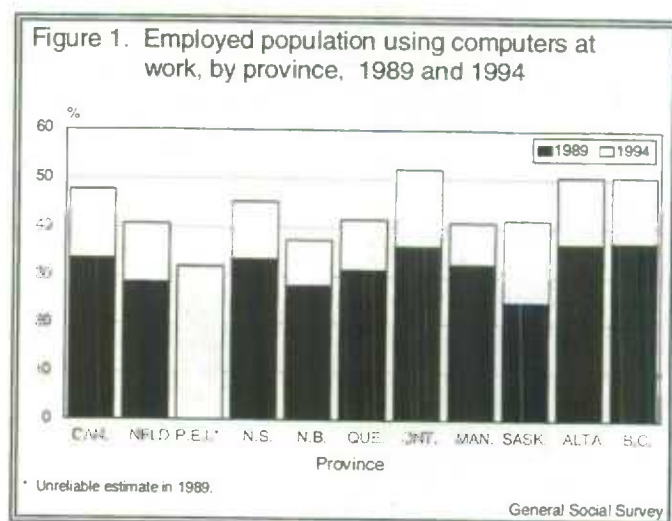


Of all the changes that have taken place in the Canadian labour market over the past few years, the introduction of computers has certainly been one of the most revolutionary. Computers have become an integral part of Canadians' lives at work, and this technological change affects not only the nature of the work but also the kinds of skills required to do the work and how Canadians perceive their jobs. The results of the 1994 General Social Survey (GSS) on education, work and retirement reveal the extent of the change.

On-the-job computer use is increasing

Since the mid-1980s, the use of computers in the workplace has grown by leaps and bounds. According to CROP and the Economic Council of Canada, about one in five employed people used a computer at work in 1985 and 1987 (15% and 21% respectively). According to GSS, by 1989 the ratio was one in three (33%), and in 1994 almost half (48%) of the employed Canadians used computers on the job (6,260,000 people).

In 1994, just over half the employed population in Ontario, Alberta and British Columbia used computers in their work (Figure 1). A comparison of the figures for 1989 and 1994 shows that in percentage terms, the largest increase in on-the-job computer use occurred in Saskatchewan.

**More women than men use computers at work**

In 1994, as in 1989, computer use was proportionally higher among employed women than among employed men: 52% compared with 45%. In both cases, this is a substantial increase from 1989, when the figures were 32% for men and 38% for women. For males, computer use was highest in Ontario (50%), while for women the largest percentages were in Alberta and British Columbia (56%).

Although the proportion of computer users varied with age, the percentage of female users exceeded that of male users in every age group, peaking at 60% for females in the 25-to-44 group. Much of the difference in computer use between men and women reflected differences in types of occupation.

Type of occupation accounts for much of the difference in computer use between men and women

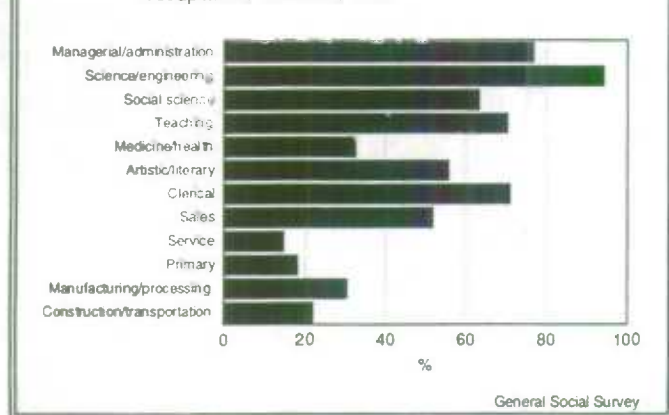
The use of computers at work varies widely by occupation (Figure 2). Managerial and professional jobs are highly computerized, as are jobs in the clerical sector. For example, about 95% of science and engineering workers and nearly 80% of managers used computers on the job in 1994. By contrast, a mere 15% of service sector employees and 20% of primary sector workers did so.



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Male-female differences in computer use, for all occupations combined, are essentially due to the occupational distribution of the two sexes; women predominate in occupations where computer use is more widespread. For instance, while one quarter of all female workers fell into the "clerical" category in 1994, 75% of them used computers on the job. By comparison, only 20% of construction and transportation workers, a category that encompassed one fifth of employed males, used a computer at work.

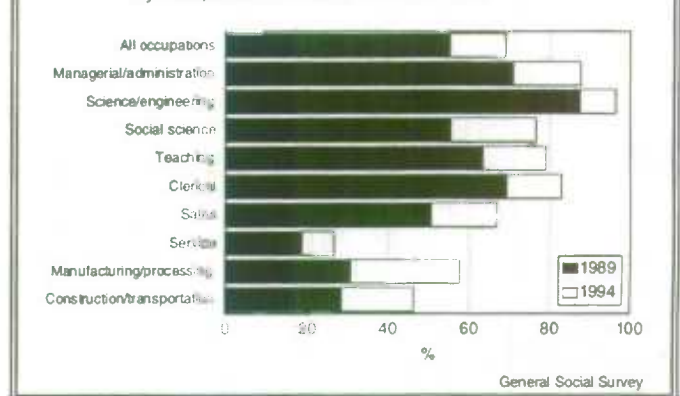
Figure 2. Employed population using computers at work, by occupation, Canada, 1994



On-the-job computer use is increasing among computer-literate workers

The use of computers in the workplace by employees who are computer literate has grown. In 1994, seven out of ten computer-literate employed people had occasion to use computers on the job, compared with approximately one in two in 1989 (Figure 3). In managerial, scientific and teaching occupations, not only did the vast majority of workers know how to operate a computer, but over 80% of them actually used one at work in 1994. The figures are much the same for clerical workers. For service-sector and blue-collar workers, however, the situation is different. Only a small proportion used computers at work, though a significant percentage in 1994 claimed to be computer literate. For example, although more than half of all service-sector workers knew how to use a computer in 1994, a mere 25% of them were required to do so on the job.

Figure 3. Employed population using computers at work as a percentage of computer-literate employed population, by occupation, Canada, 1989 and 1994



Computers are being used for longer periods of time and for a wider range of activities

People who use computers at work do so, on average, for nearly half their normal work time. In 1994, they spent almost 18 hours a week performing various tasks on the computer, compared with an average of 16 hours in 1989. In general, women used the computer longer than men in 1994 (19 hours compared with 16 hours); again here, part of the difference was attributable to occupation. As in 1989, science and engineering employees and clerical workers spent the most time at the computer: an average of 25 hours a week. People in artistic and literary occupations were also heavy users (21 hours). The average length of use rose substantially between 1989 and 1994 among employees in social science, managerial and administrative jobs. The fact that length of use increased more slowly in occupational groups where computer use was already high in 1989 suggests that these groups were approaching the maximum average time of use.

Some computer activities are widespread across all occupational groups. In 1994, for example, about eight out of ten users reported doing word processing, eight out of ten did data entry, and seven out of ten did record keeping. The percentages ranged from 50% to 80% among blue-collar workers, who are not heavy computer users. On the other hand, there were considerable differences when more complex activities such as data analysis and programming were involved. These tasks were performed chiefly by science and engineering workers and, to a lesser extent, managers.

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In 1994, about 14% of employed Canadians were plugged into the information highway. Traffic on this highway, as measured by the use of data servers such as INTERNET was dominated by science and engineering workers (40% of them) and social scientists and teachers (23% in both cases).

The introduction of computers affects the way people perceive their workplace

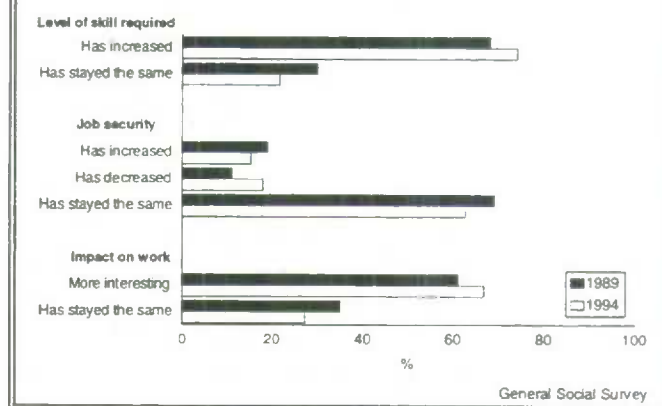
The introduction of computers or the advent of new automation technologies in the workplace continues to have a major impact on the way Canadian workers view their jobs. In 1994, more than half of all employed people reported that their work had been "greatly" or "somewhat" affected by technological change in the preceding five years. This is a slight increase from 1989, when 44% of workers said they had been affected. In both surveys, those who claimed to be most affected by technological change were managers and professionals (mostly men). Although overall male and female workers had exactly the same opinion about the effect of the computer revolution, women in clerical, sales and service jobs reported experiencing the greatest impact.

In 1994, of all computer users who felt "greatly" or "somewhat" affected by the introduction of computers, 75% of both men and women agreed that the computer had increased the level of skill required to do their jobs (Figure 4). This perception was common to all major occupational groups.

The introduction of computers also caused a little more insecurity among the employed. In 1994, computer users who believed their job security had declined (about one in five) due to the introduction of computers marginally outnumbered those who felt it had increased. In 1989, 11% of affected workers claimed that their job security had decreased due to the introduction. However, in both years more than half the men and women affected by technological change at work were of the opinion that automation had not had an impact on their job security in the previous five years.

Finally, it is worth noting that in 1994, approximately two thirds of computer users considered that their work had become more interesting as a result of the introduction of computers. Here again, the proportion was much the same for both men and women.

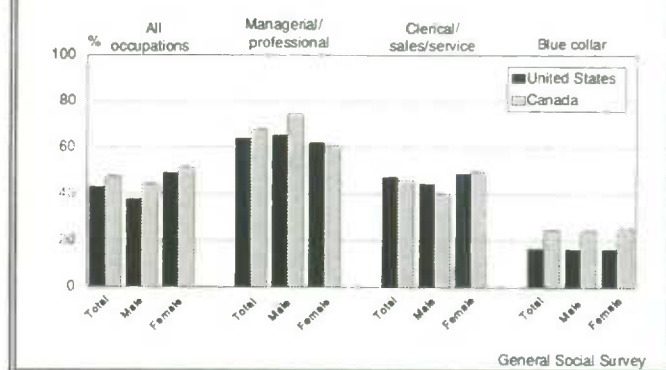
Figure 4. Perceptions of the impact of computers in the workplace, Canada, 1989 and 1994



Canadian workers now use computers as much as American workers

A comparison of the 1994 GSS data with the results of the United States Current Population Survey of 1993 reveals that Canadian workers were using computers a little more than their neighbours to the south (the situation was reversed in 1989). Overall, 48% of employed Canadians used computers at work in 1994, compared with 43% of employed Americans in 1993 (Figure 5). A breakdown by major occupational group and sex shows that the differences between the two countries are primarily due to the male and blue-collar groups.

Figure 5. Employed population using computers at work, by sex and occupation, Canada (1994) and the United States (1993)





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Most of the information presented in this fact sheet comes from the 1994 cycle of the General Social Survey (GSS), whose general topic was education, work and retirement. This topic was first covered in GSS in 1989. The 1994 survey focused on the subject of making the transition to retirement.

The target population of the 1994 GSS consisted of all individuals aged 15 and over living in a private household in the 10 provinces of Canada. The sample was composed of approximately 11,500 respondents, including a main sample of 10,000 persons and an additional sample of 1,500 people between 55 and 74 years of age. The data were collected over a 12-month period, from January 1994 to December 1994, using a computer-assisted telephone interview system. The response rate for the 1994 GSS was 83.4%.