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**COMPUTER USE AND INTERNET USE  
BY MEMBERS OF RURAL HOUSEHOLDS**

**Margaret Thompson-James**  
Statistics Canada

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# **Computer Use and Internet Use by Members of Rural Households**

**Margaret Thompson-James**

## **Abstract**

The share of rural and small town individuals with a computer at home increased from 14 percent in 1989 to 23 percent in 1994. The largest increase was for individuals with at least high school graduation and for individuals in households with total income above \$40,000.

In 1989, 12 percent of rural and small town residents used a computer at work. This increased to 17 percent in 1994. However, 40 percent of rural and small town individuals were impacted by the introduction of computers at work. Two-thirds noted that computers caused an increase in skill level needed to do their job.

In 1997, at least one individual in 29 percent of rural households had used computer communications at least once (from any location). In 10 percent of rural households, one person uses computer communication in a typical month *from home*. General browsing and e-mail were the most common uses with electronic banking and shopping being much less common.

Only 3 percent of rural households report using computer communications in a typical month for a self-employed business.

## Introduction

Rural populations are defined, in part, by their distance to a metropolitan centre. The use of computers, and more recently, the access to the Internet, have been proposed as a way for rural residents to reduce the costs of distance. The purpose of this working paper is to review the use of computers by members of rural households and, specifically, to review the use of the Internet by rural residents.

In years past, everything took time as it was done by manual labour with very little involvement of technological innovations. A great number of new inventions are being created to reduce time and labour costs. In particular, technology in the communications field has greatly expanded. In the last 100 years, we have gone from having no phone, to a party line (a service received still by some rural Canadians), to private lines, to just recently having the ability to link into computer communications within the household. This is still a novelty to some, but 38.1 percent of Canadians households have reported that they have at least tried using computer communications.<sup>1</sup>

With this technology at our fingertips, our nation - the cities, towns and spaces in between - is being compressed and space is becoming less of a problem. New communication technologies are an advantage for the people who are willing to work with the technology. However, many people are timid of such technology and make great attempts to avoid it at all costs; these individuals are what make narrowing the gap between urban and rural so difficult. The younger generations are growing up with these new innovations and have been inundated with such advancements so to them having a computer and being connected to the Internet at home is not a luxury but rather a necessity.

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<sup>1</sup> Statistics Canada. Household Internet Use Survey, 1997

What is to be discussed in this working paper are the rural-urban patterns in computer use, education, and acceptance between 1989 and 1994. Also, the use of computer communications in 1997 will be reviewed.

### **Definitions**

**CMA** – Census Metropolitan Area. A CMA has an urban core of 100,000 or over and includes all neighboring municipalities where 50 percent or more of the work force commutes into the urban core.

**CA** – Census Agglomeration. A CA has an urban core of 10,000 to 99,999 and includes all neighboring municipalities where 50 percent or more of the work force commutes to the core.

**RST** – Rural and Small Town. RST Canada is the non-CMA and non-CA population. It is the population outside the commuting zones of larger urban centres.

**Rural** – as published by the Census of Population, “rural” refers to the population outside centres of 1,000 or more. However, in the Household Internet Use Survey (HIUS), “rural” refers, essentially, to the “rural” component of RST Canada because “rural” residents within CMAs and CAs are, generally, classified with the CMA and CA. The correspondence is not exact because the sampling frame for HIUS is based on the Labour Force Survey sampling frame and for various operational reasons, the standard urbanization classes cannot be replicated.

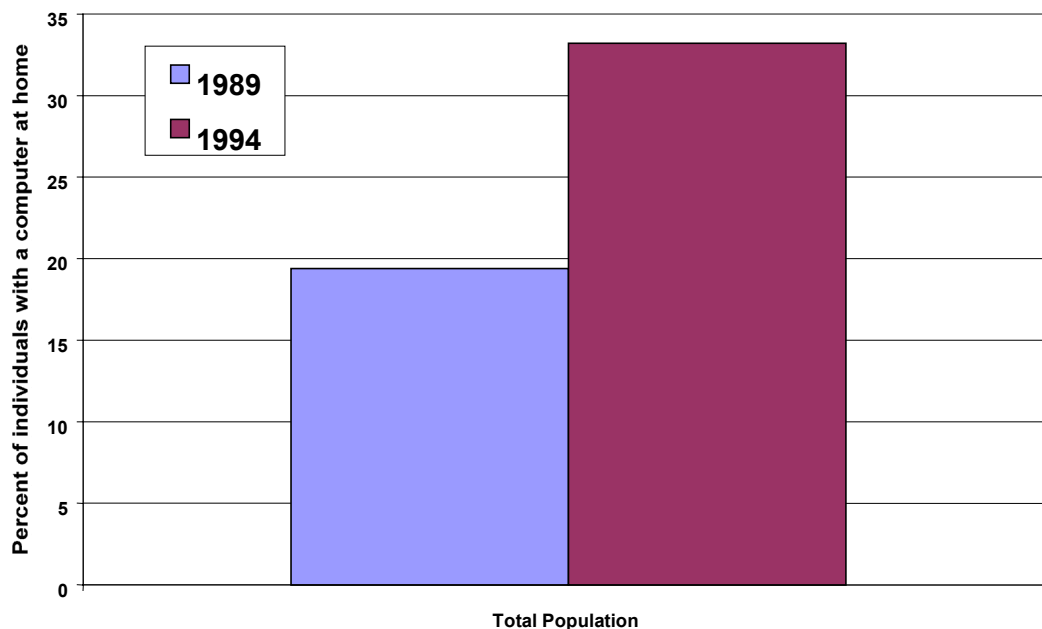
**Urban** – as published by the Census of Population, “urban” refers to the population in centres of 1,000 or more. In the HIUS, ‘urban’ is, essentially, the total population within CMAs and CAs plus the small town component of RST areas.

## Computers at home

The number of Canadians and Canadian households that have a computer at home is on the rise. More schools are demanding assignments to be typed and not hand written, computer programs are being designed to assist daily functions of owning a house (e.g. accounting programs, 'how-to' manuals) and so on. In 1989, 19.4 percent of Canadians had a computer at home, which increased to 33.2 percent in 1994 (Figure 1). In 1997 the share of Canadian households with computers was 36.4 percent<sup>2</sup>. These increases show that Canadians are accepting these technologies.

Figure 1

### More Canadians have a computer in their home



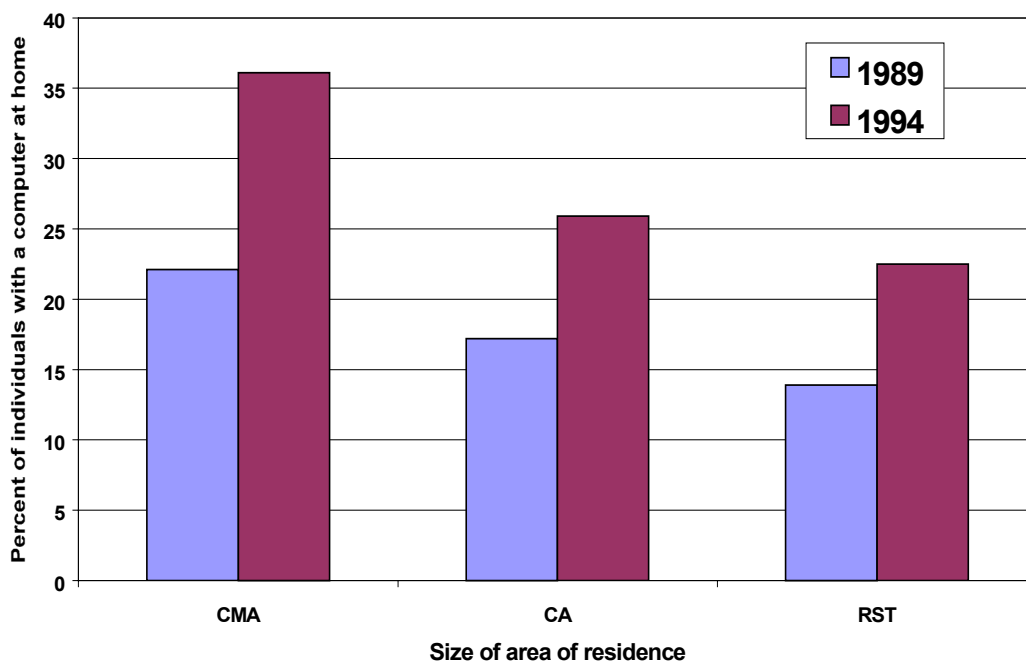
Source: Statistics Canada. General Social Survey, 1989, 1994.

<sup>2</sup> Statistics Canada, Household Internet Use Survey, 1997.

### ***Have a computer at home***

In looking at individuals with a computer at home across all geographic regions, we are not surprised to see that CMAs have the highest percent of computers at home. What is interesting to note is that between 1989 and 1994, all areas attained considerable increases in the share of individuals with a computer at home (Figure 2). Although the share is lower in RST areas, it is not as low as many may assume.

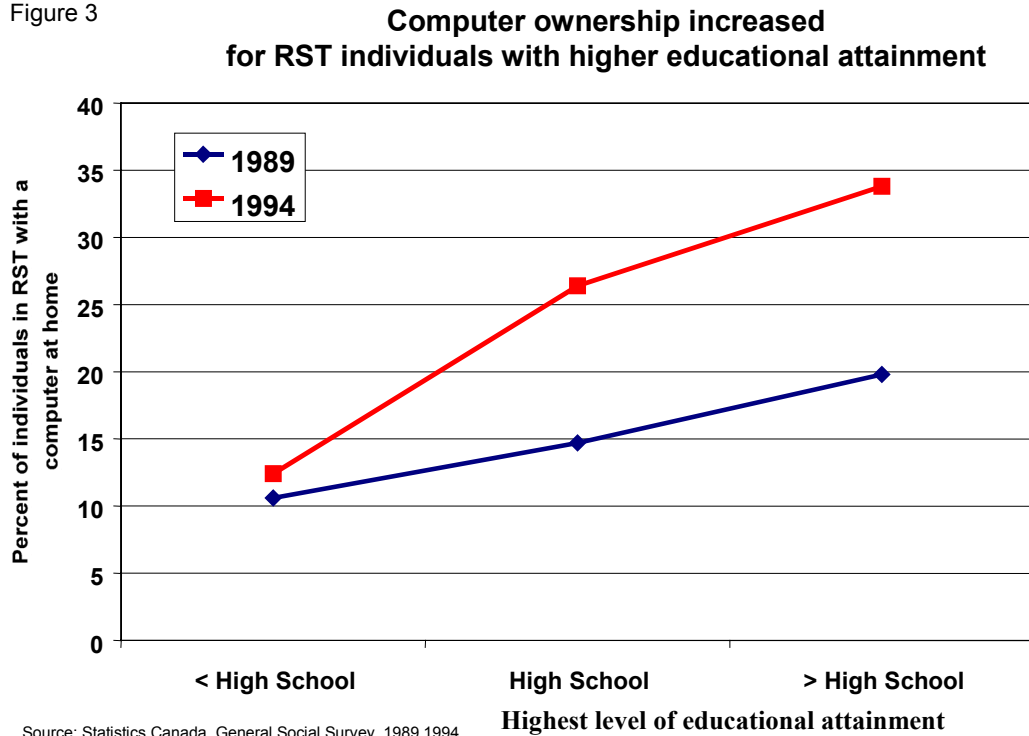
Figure 2 **In 1994, an overall increase of computers at home occurred**



Source: Statistics Canada. General Social Survey, 1989,1994.

By looking at RST individuals by their level of education, we can see the pattern of adoption of computers (Figure 3).

Figure 3

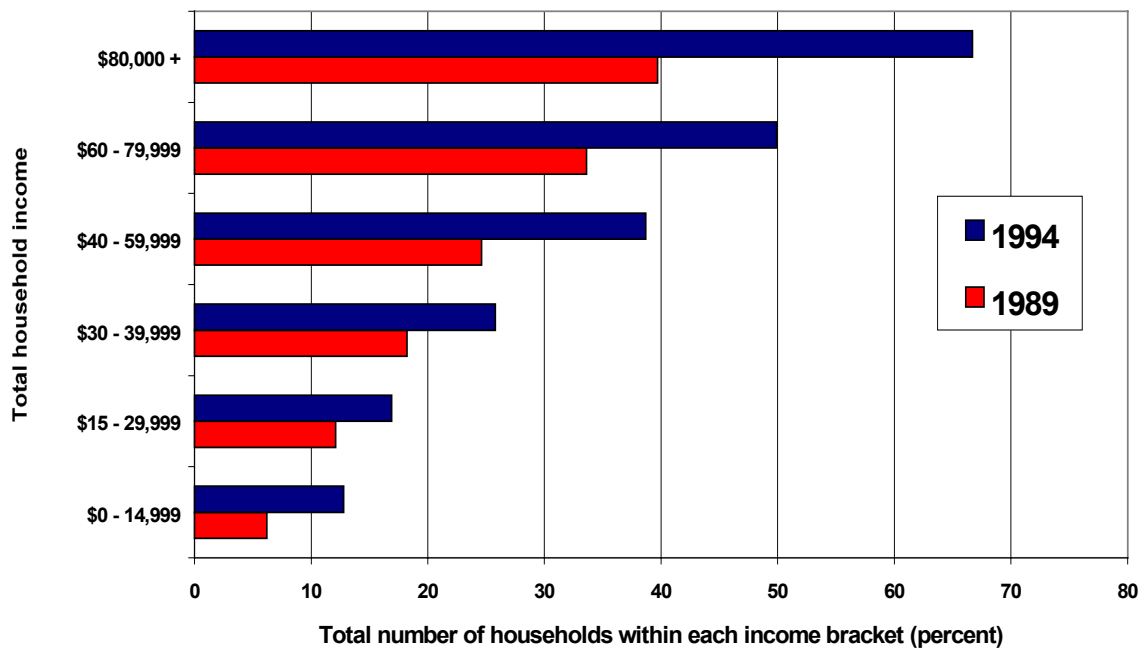


For those individuals with less than high school education, there was a slight increase in the share having a computer at home. A large increase occurred for those individuals who have graduated from high school – an 80 percent increase in the share. As well, for those individuals with an education greater than high school, we see an increase in the share of 70 percent over the 1989 to 1994 period. Some factors influencing computer use are that many schools are requiring assignments to be completed by computer. In addition, individuals living in rural areas are located further away from some sources of entertainment. A computer with its multimedia technology may act as a source of entertainment with Internet service, computer games, etc.



Another important pattern is the access to computers at home in relation to total household income. The share of individuals having a computer at home is greater in households with a higher income (Figure 4). A considerable increase occurred for those within the \$40,000 to \$59,999 income bracket where an increase of 14.1 percentage points is seen over five years. The largest increase is 27 percentage points and this is seen in the \$80,000 and over income group. The share of individuals with a computer at home did not increase between 1989 and 1994 for individuals with lower household incomes, but a dramatic increase occurred for those households with high incomes. This conclusion holds for all individuals (Figure 4) and for individuals in RST households.

Figure 4 **The share of individuals who have a computer at home is greater in households with higher incomes**

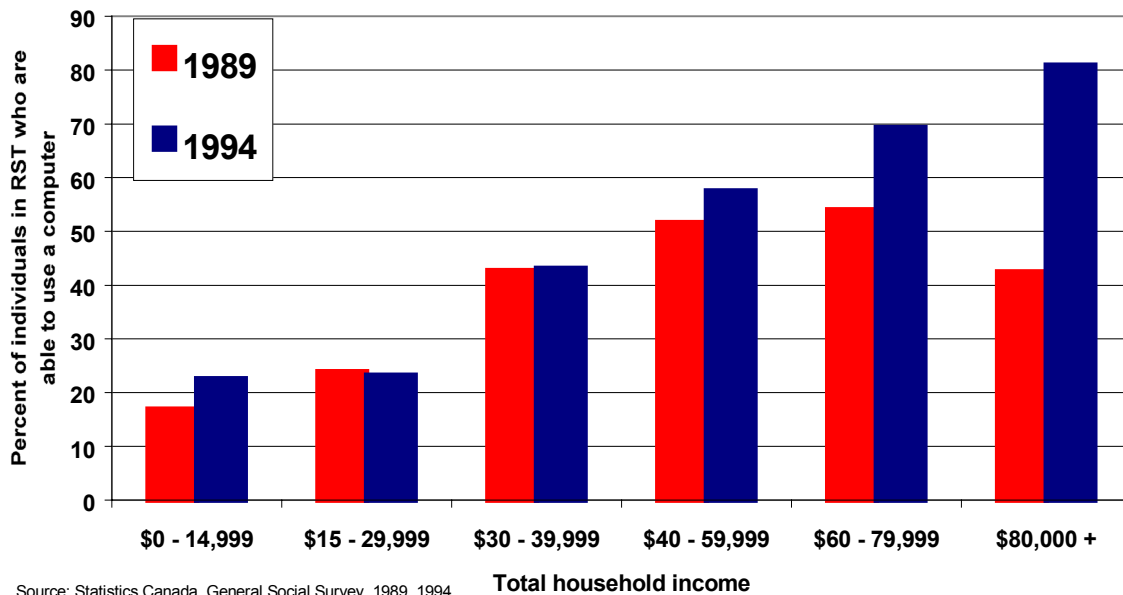


Source: Statistics Canada. General Social Survey, 1989, 1994.

### **Ability<sup>3</sup> to use a computer**

Changing streams now, let's look at the trends that are noticeable with persons reporting being able to use a computer. The pattern is consistent with the observations above on presence of a computer in the household. It is interesting to note that in 1989 within RST, once you surpassed the \$30,000 to \$39,999 income bracket, the ability to use a computer was lower (Figure 5). Five years later, in 1994 we can observe that there is a steady increase in ability to use a computer once the total household income is above \$30,000 to \$39,999. Two large increases occurred in RST. The first in the \$60,000 to \$79,999 income group of 15.3 percentage points and the second in the \$80,000 plus income group where there is an increase of 38.4 percentage points (Figure 5).

Figure 5 **Ability to use a computer experienced a large increase in the upper income brackets in 1994 in RST**

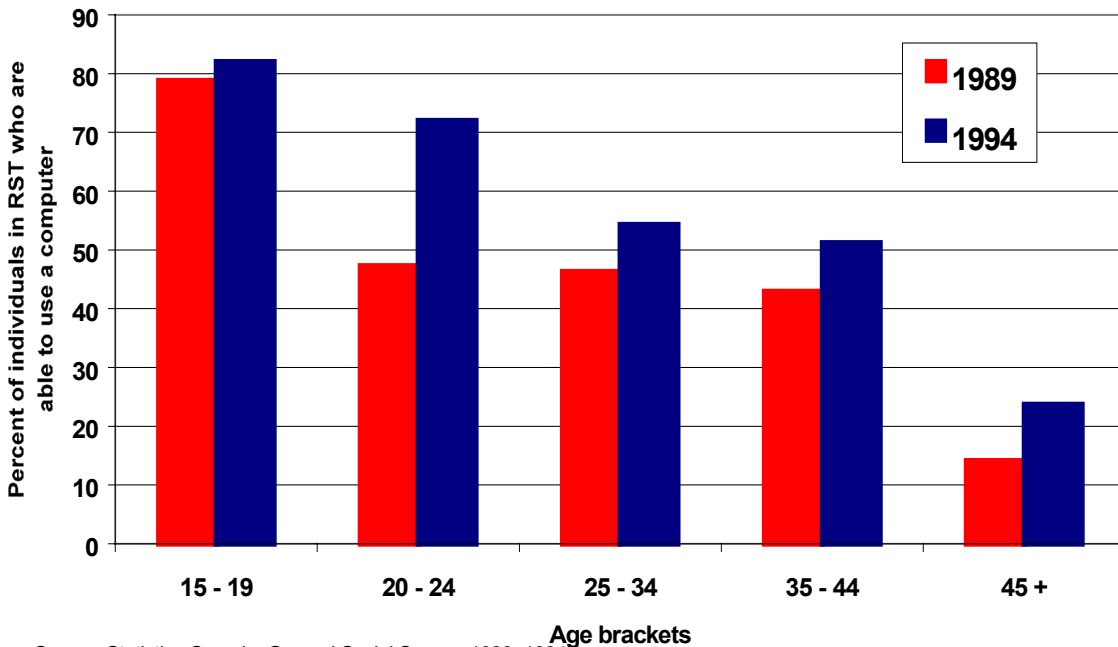


<sup>3</sup> Ability is based on the response to the question 'Can you do anything on a computer (excluding video games), for example, word processing or data entry?'

In 1989, individuals living in RST aged 15 to 19 had a greater ability to use a computer (30.5 percent) over those individuals of the same age living in CA's (26.2 percent) (data not shown). Between 1989 and 1994, there was little change in the 15 to 19 age group able to use a computer but a very significant increase in the share of 20 to 24 age group (the share increased by 52.2 percent) (Figure 6). What is key to note here is that in the older age groups, there appears to be a consistently lower share of individuals being able to use a computer, yet each age group showed an increase over the five year period. The biggest increase in 1994 occurred in the 20-24 age group, most likely due to the ageing of the 15 –19 age group that had a higher ability to use a computer five years previously (Figure 6).

Figure 6

**RST youth (aged 20 to 24) experienced a significant increase in ability to use a computer in 1994**



Source: Statistics Canada. General Social Survey, 1989, 1994.

### ***Education and computers***

The education field has experienced a great number of changes over the years and we have now reached a time where technology is becoming more dominant within our education system. Individuals coming through the educational system are required to take courses in computers and many individuals in the work force are taking courses to 'keep abreast' of current and upcoming computer programs. In 1989, 31.5 percent of the Canadian population had taken a computer course, five years later (1994) that number had grown to 40.8 percent (Table 1).

Table 1 – Individuals who have taken a computer course as a percent of all individuals within the size of area of residence

	<u>Total</u>	<u>CMA</u>	<u>CA</u>	<u>RST</u>
1989	31.5	36.3	28.4	21.0
1994	40.8	43.1	36.0	31.2

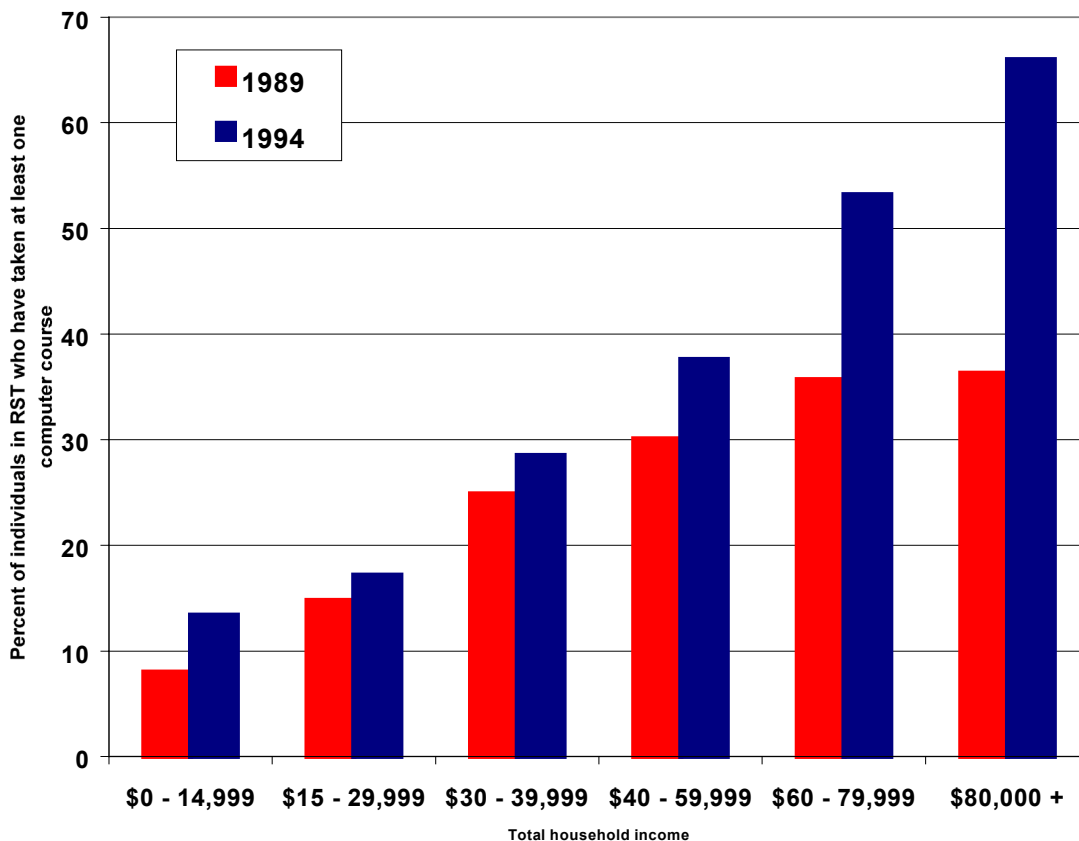
Source: Statistics Canada. General Social Survey, 1989,1994.

### ***Participation in computer courses***

The greatest change in taking computer courses occurred among individuals in households with higher incomes. In 1989, 35.7 percent of individuals in RST with a total household income of \$60,000 to \$79,999 had taken a computer course – this increased in 1994 to 53.2 percent. Individuals in households with an income of \$80,000 or more had a 36.3 percent rate of participation in computer courses and this increased to 66 percent in 1994 (Figure 7).

There are two important observations that can be made from Figure 7. One is that RST individuals in households with a higher income are more likely to have taken a computer course. The second observation is that for RST individuals, only individuals in households with income over \$40,000 showed an increase in participation in computer courses. Individuals in higher income households started ahead of the individuals in lower income households and increased the difference in 1994.

Figure 7 **The higher the total household income, the higher the share of individuals who have taken a computer course**

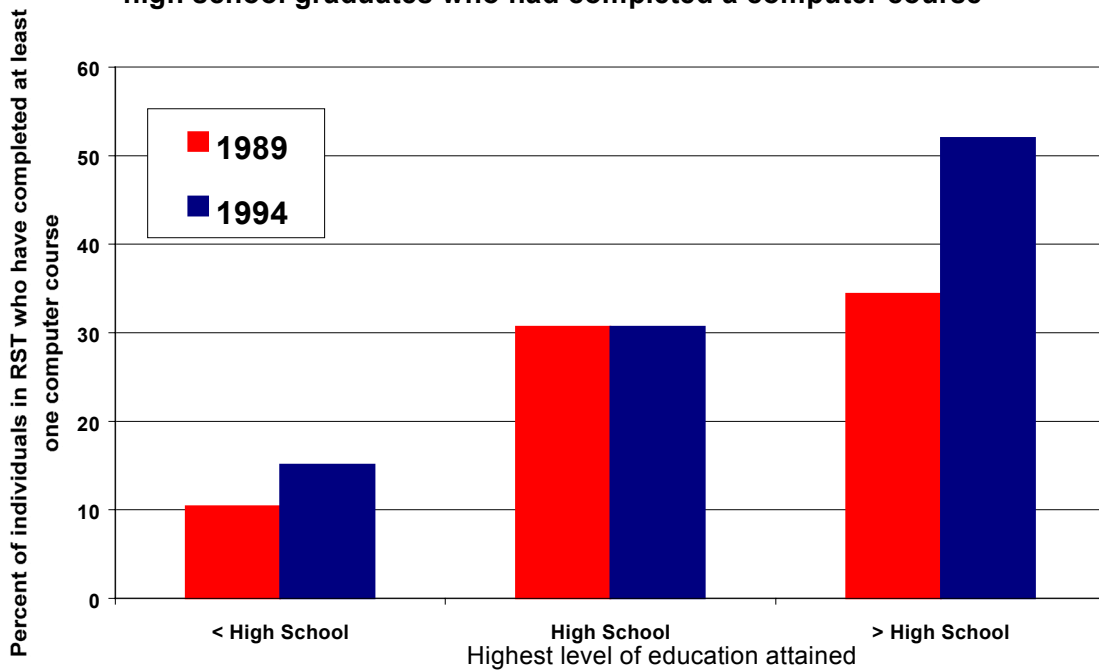


Source: Statistics Canada. General Social Survey, 1989, 1994.

Some general conclusions can be drawn from looking at levels of education and the percent that have taken a computer course. In 1989, RST individuals demonstrated a continuing increase of participation in taking computer courses with each successive level of education. For those RST

individuals in 1989 with less than high school education, 10.4 percent of them had taken a computer course (Figure 8). At the high school level, 30.7 percent had taken at least one course and 34.4 percent with an education greater than high school had taken a computer course. In 1994, we see that those individuals with less than a high school education have a 15.1 percent rate of having taken a computer course (a 5 percentage point increase). Surprisingly, when we look at Figure 8 we see that those individuals in RST who have attained their high school diploma, experienced no change in taking a computer course, yet those with a post secondary education experienced a 17.6 percentage point increase.

Figure 8 **In RST there was no change over five years in the percent of high school graduates who had completed a computer course**

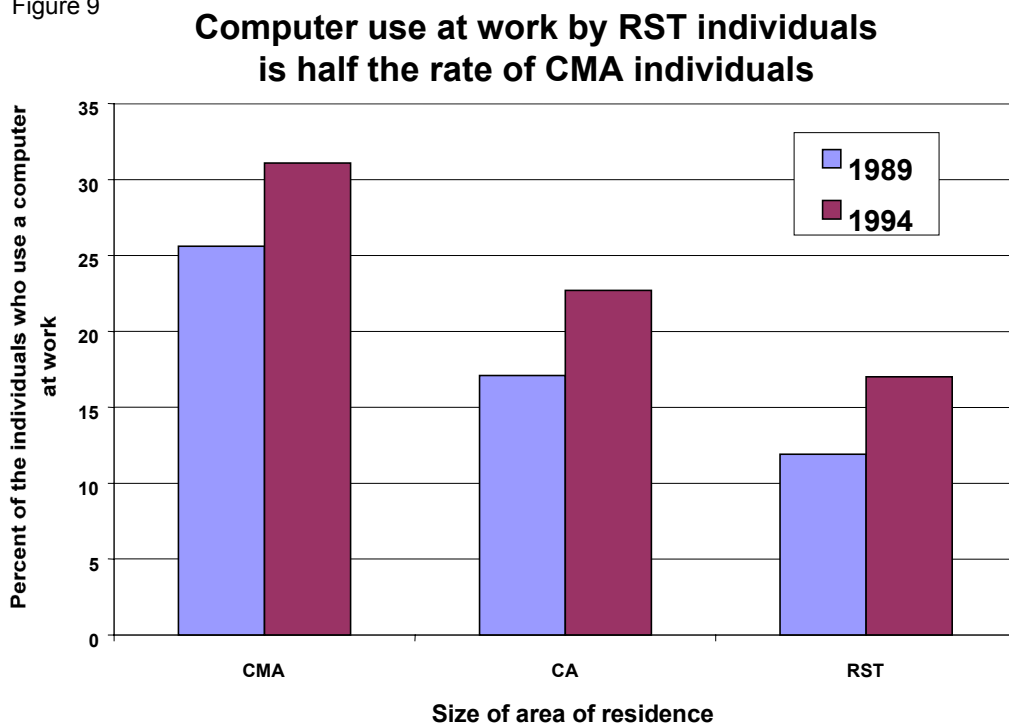


Source: Statistics Canada. General Social Survey, 1989,1994.

## Computers at work

Computers have been in the work place for many years, but until recently few had computers at their desk. Now, it is odd to see an office that is not equipped with a computer. In 1989, 21.2 percent of Canadians used a computer at work, this rose to 28.2 percent in 1994.<sup>4</sup> Computers reduce the amount of time it takes to complete tasks and thus labour costs are reduced. In Figure 9 we can see that computer use in the work place is increasing, despite the residence type.

Figure 9



Source: Statistics Canada. General Social Survey, 1989,1994.

<sup>4</sup> Statistics Canada. General Social Survey, 1989,1994.

On average, each of the areas of residence increased computer use at work by approximately 5 percentage points (Table 2). In looking at the relative gain in computer use at work, a 5 percentage point gain represents a 43 percent increase in the share in RST areas compared to a 21 percent increase in the share in CMAs and a 33 percent increase in the share in CAs.

Table 2 – Percent of individuals using a computer at work

	<b>Total Population</b>	<b>CMA</b>	<b>CA</b>	<b>RST</b>
<b>1989</b>	21.2	25.6	17.1	11.9
<b>1994</b>	28.2	31.1	22.7	17
<b>Absolute Difference</b>	7	5.5	5.6	5.1
<b>Percent Difference</b> <sup>5</sup>	33%	21%	33%	43%

Source: Statistics Canada. General Social Survey 1989,1994.

Overall, RST is behind other areas in Canada, but RST is growing at a slightly faster pace.

### ***Impact of computers on skill level***

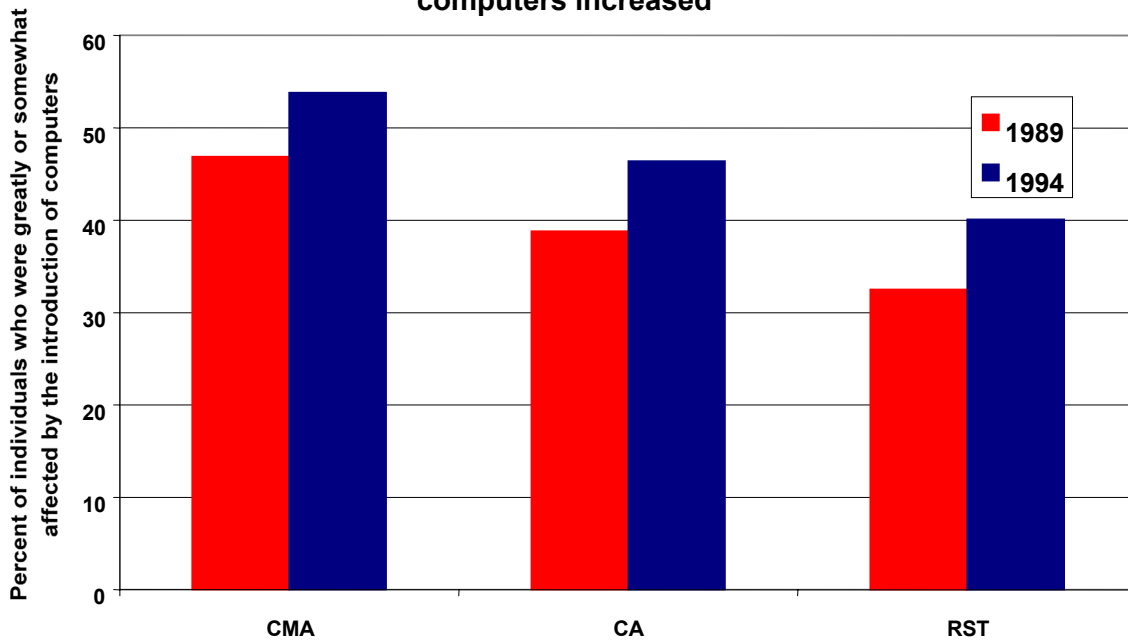
The impact of computers on skill levels has been a concern for many people. One concern is whether the introduction of computers would lower the skills required by employees. The opposite concern was whether the skills required would increase such that individuals would no longer be able to keep their jobs. No matter how you cut the pie (i.e. education level, total household income, labour force status, etc.) a large portion of individuals reported that the impact of computers increased the skill level needed to perform their job. In looking at Figure 10 we can see an increase in the percent of individuals who were greatly or somewhat affected by the introduction of computers.

<sup>5</sup> This was calculated as (absolute difference / 1989 share)\*100.



Figure 10

**In 1994 the share of individuals that were affected by computers increased**

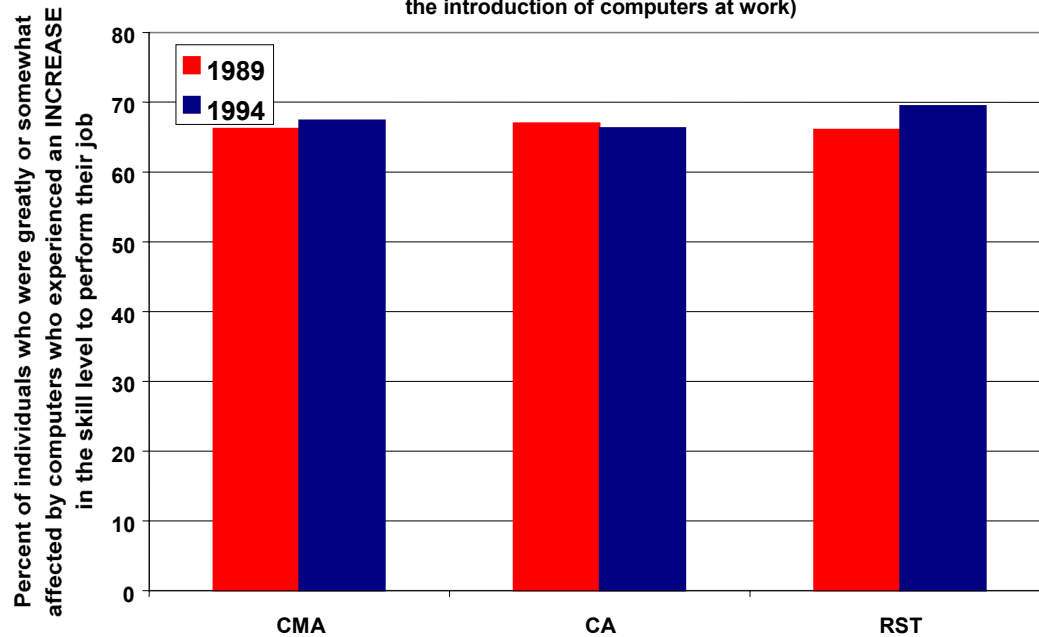


Source: Statistics Canada. General Social Survey, 1989, 1994.

Within RST in 1994, 17 percent of individuals used a computer at work (Figure 9) and of those individuals, 40 percent were greatly or somewhat affected by the introduction of computers (Figure 10). Of those that were greatly or somewhat affected by the introduction of computers, about two-thirds reported having experienced an increase in skill level to perform their job (Figure 11). Interestingly, regardless of urbanisation class, about two-thirds report an increase in skill levels to do their job as a result of the introduction of computers.

Figure 11

**Regardless of urbanisation class, about two-thirds report an increase in skill level to do their job**  
(for individuals who were greatly or somewhat affected by the introduction of computers at work)



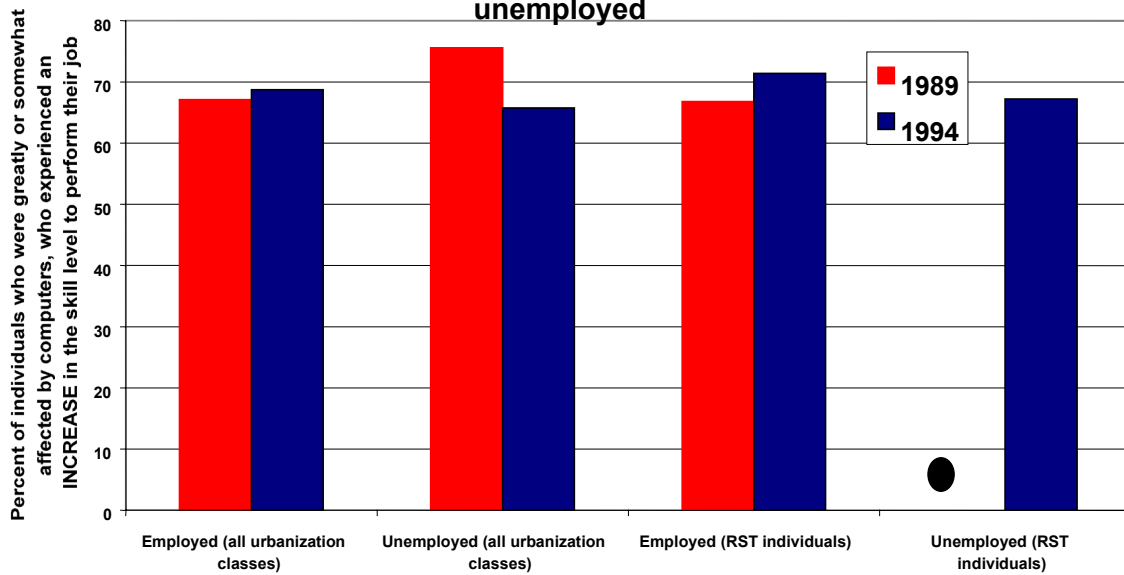
Source: Statistics Canada. General Social Survey, 1989, 1994.

One can conclude from these observations that the old myth of computers turning people into robots, is just that, a myth. Computers have brought people into an era where keeping skills up to date is essential. Rather than removing the skills needed to perform a job, computers have placed more emphasis on having skills to enhance their use. Computers have affected most Canadians lives in one form or another but the impact on each individual will always vary to some degree.

Interestingly, the degree to which individuals experienced an increase in skill level does not appear to be associated with being unemployed (Figure 12). We see that a similar share of employed and unemployed individuals reported an increase in skill level. Individuals do not appear to be unemployed because the introduction of computers increased job skill levels.

Figure 12

**An increase in job skill level due to the introduction of computers does not appear to be associated with being unemployed**



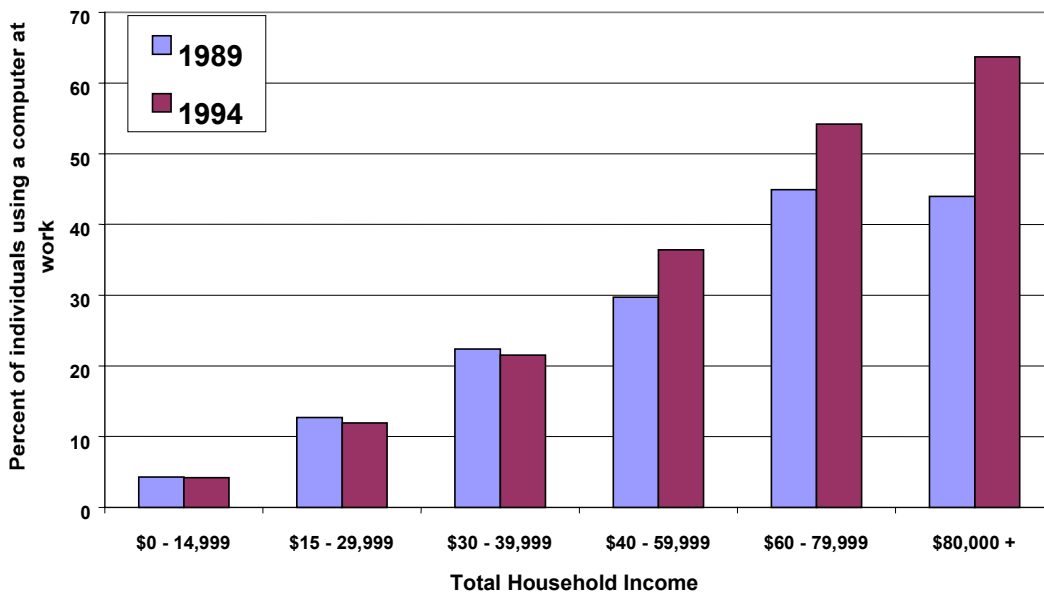
● Data not reported due to small sample size.

Source: Statistics Canada. General Social Survey, 1989, 1994.

### ***Income levels and computers at work***

Computer use in the work place is more prevalent among individuals of high-income households (Figure 13). There has been a change in the share of individuals who use a computer at work between 1989 and 1994, but only for individuals in households with higher incomes. It is clear from Figure 13 that individuals in households with higher incomes are more likely to use a computer at work. Surprisingly, over the 1989 to 1994 period, individuals in the lower income brackets have changed little (at some points declined) but for individuals in households with incomes over \$40,000, there was an increase. The higher the household income the more likely it is that you use a computer at work. Computers appear to be becoming necessary in day to day life – especially for those who typically have left such tasks up to support staff.

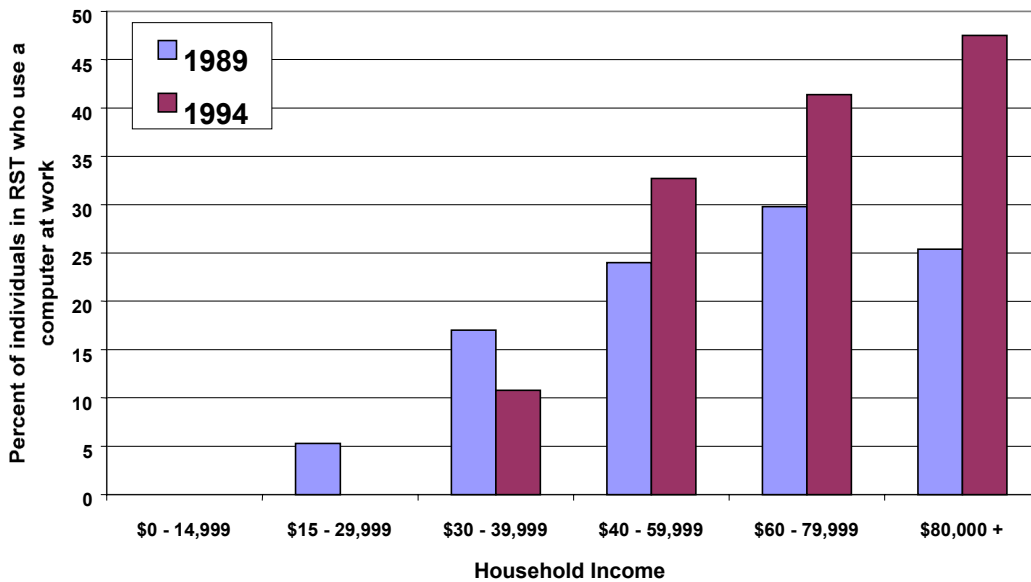
Figure 13 **In 1994 Canadians with a household income of 40,000 or more were more likely to use a computer at work**



Source: Statistics Canada. General Social Survey, 1989,1994.

Within RST, the relationship between computer use at work household income follows much the same pattern as the overall Canadian pattern – however, there are more defined increases and decreases (Figure 14).

Figure 14 **More individuals in RST with a household income of 40, 000+ used computers at work in 1994**



Source: Statistics Canada. General Social Survey, 1989,1994

### ***Computer use at work by age class***

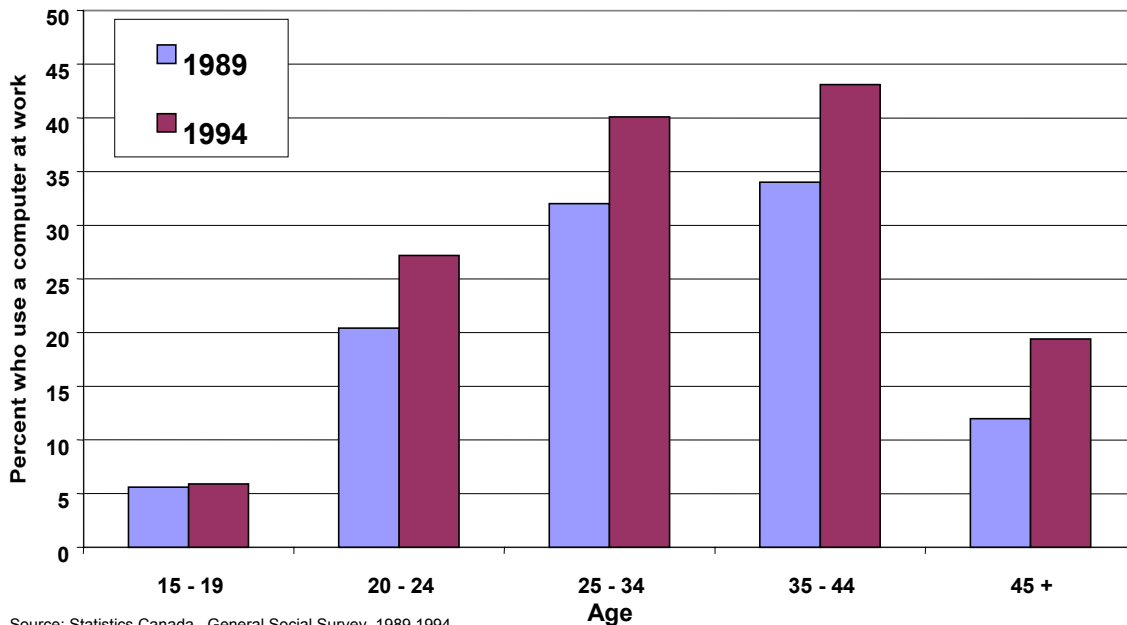
The use of computers at work rose from 21.2 percent in 1989 to 28.2 percent in 1994 (Table 3). The largest increase occurred in the 35 to 44 age bracket (Figure 15) where we see an increase of 9.1 percentage points over the five years. In the 45+ age group there is a 62 percent increase in the share using a computer at work (Table 3).

Table 3 – Percent of individuals using a computer at work by age brackets, Canada, 1989, 1994

	1989	1994	Absolute Difference	Percent Difference
<b>All Ages</b>	21.2	28.2	7	33%
<b>15 – 19</b>	5.6	5.9	0.3	5%
<b>20 – 24</b>	20.4	27.2	6.8	33%
<b>25 – 34</b>	32	40.1	8.1	25%
<b>35 – 44</b>	34	43.1	9.1	27%
<b>45 +</b>	12	19.4	7.4	62%

Source: Statistics Canada. General Social Survey, 1989,1994.

Figure 15 **Overall, in Canada, there was an increase in computer use at work in all age categories**

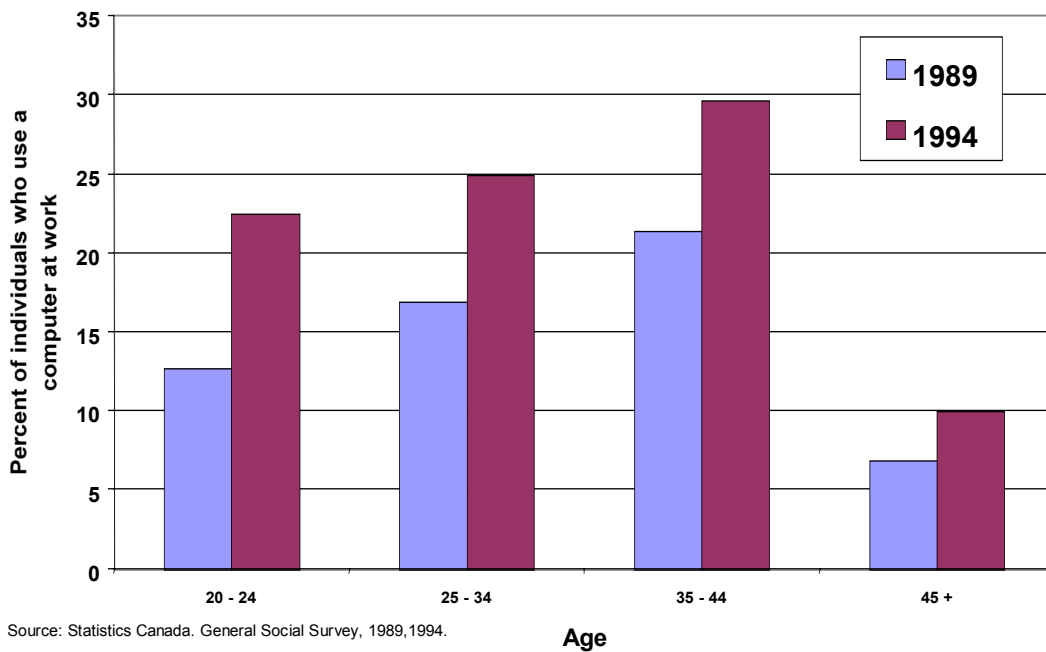


Source: Statistics Canada. General Social Survey, 1989,1994.

RST followed the same pattern as Canada, which is not that surprising (Figure 16). However, it is worth noting the large increase experienced in the 20 to 24 age group. Here a 78 percent increase in the share using a computer at work shows that there is a large push for the younger generations to have computer knowledge.

Figure 16

**The younger members of the RST workforce show a larger increase in the use of computers at work**

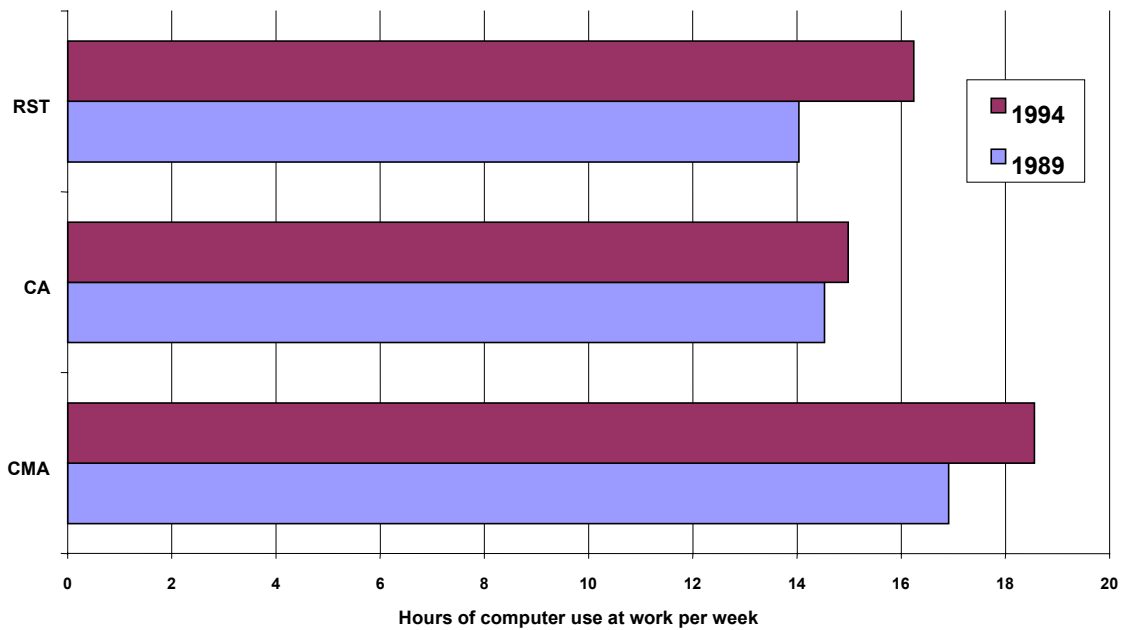


***Hours of computer use per week at work***

The amount of time that people spend using a computer is on the rise -- this is not unexpected with the increasing demand for computer knowledge and computer specialists. In 1989 the average Canadian used the computer at work for 16.24 hours per week which increased in 1994 to 17.80 hours, an increase of 1.56 hours per week. These are just calculated for persons who use a computer at work. Earlier we saw that fewer RST persons use computers, but here, for individuals using computers, the hours per week look similar. When the country

is divided up into the different types of urbanisation classes, it is interesting to see that individuals in RST spend approximately the same amount of hours per week using the computer at work. As well, RST individuals had the largest increase of hours of computer work use per week over the five-year period (Figure 17).

Figure 17 **An increase in the number of hours of computer use at work per week over the five year period**

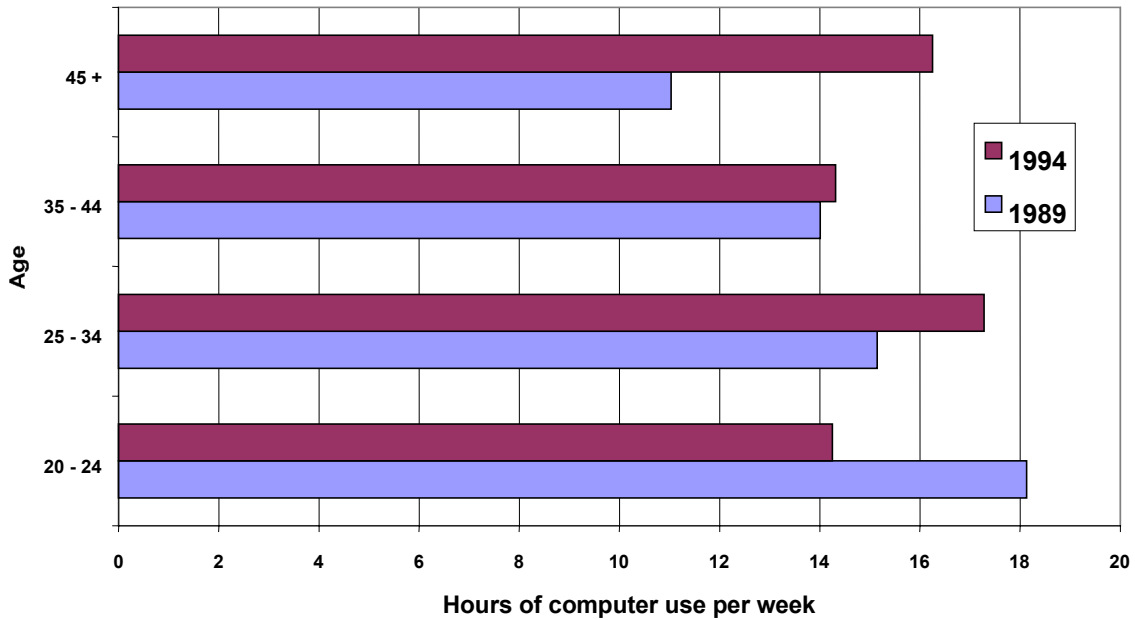


Source: Statistics Canada. General Social Survey, 1989, 1994.



In looking specifically at RST individuals (Figure 18), we can observe an increase in the number of hours of computer work use for those aged 45 and over – a climb of 5.22 hours per week. In the 20 to 24 age group a decline is observed in 1994, this might be due to those individuals moving into larger cities for educational purposes (e.g. university, college, etc.). One of the discrepancies in this data might be what peoples' perception of a computer is. For example, cashiers might consider their cash register to be a computer and some factory workers might consider their time clock to be a computer – it is really just a matter of perception.

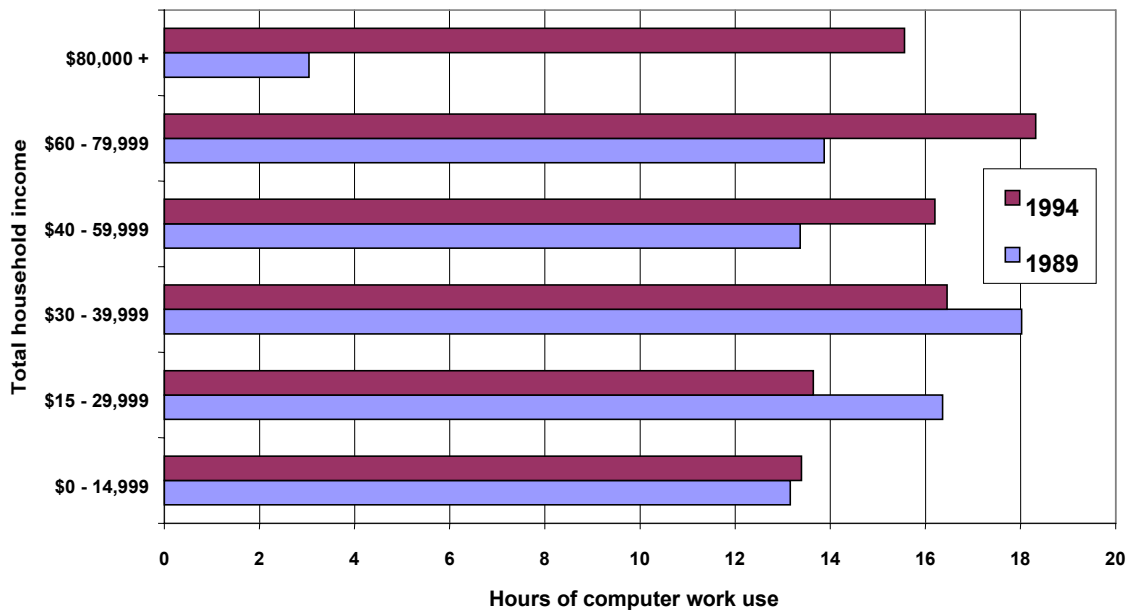
Figure 18 **Youth in RST spend the most amount of hours using the computer for work per week**



Source: Statistics Canada. General Social Survey, 1989, 1994.

There are some immense jumps in the number of hours of computer use per week at work for RST individuals across levels of total household income (Figure 19). We see the continuing pattern of lower income brackets experiencing a lower in the number of hours of computer use at work. An exception is the group with total household income of \$0 to 14,999. Again, once the total household income surpasses \$40,000 we observe an increase in the hours of computer use at work. In the total household income bracket of \$80,000 and over, a tremendous increase of 12.52 hours is encountered over the five-year period. The two other income brackets above 40,000 have an average increase of 3.64 hours. Once again we can conclude that the larger the total household income, the higher will be the chance of spending more hours on the computer for work.

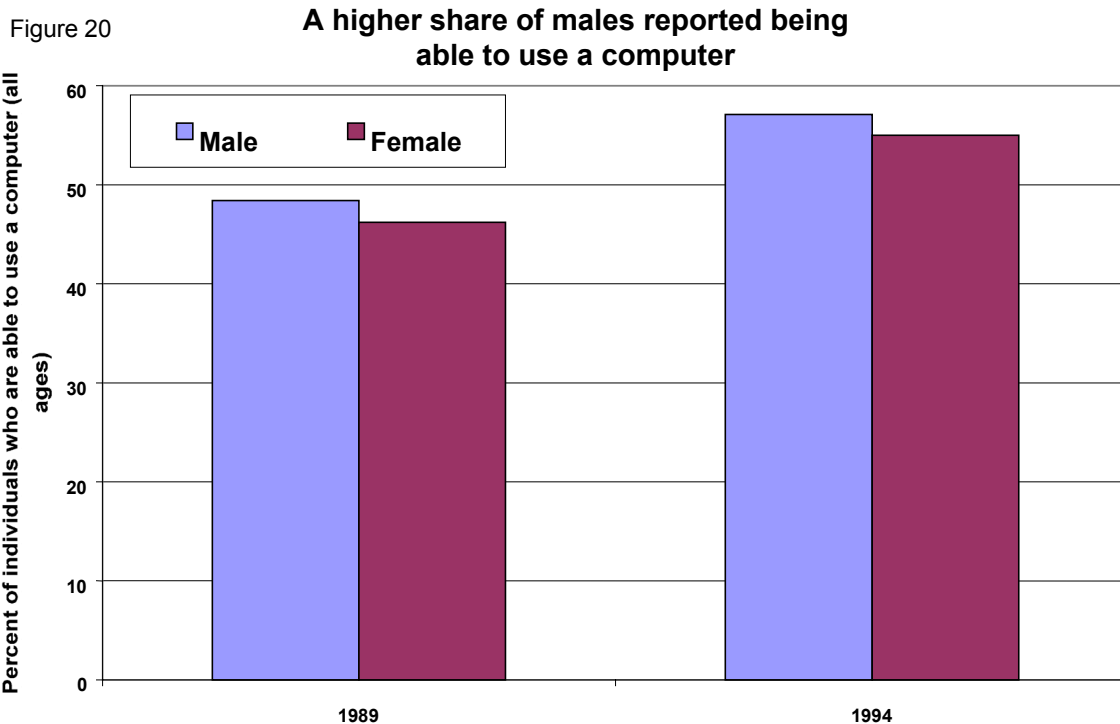
Figure 19 **Massive increase in the number of computer work hours for households with an income of 80,000+**



Source: Statistics Canada. General Social Survey, 1989,1994.

## Other computer issues

The gender issue is always one of interest when investigating different topics, especially the world of technology. So computer use should not fall short on this topic. In comparing the ability of each gender to use a computer (Figure 20), we can see that males have a slightly higher share reporting an ability to use a computer. There appears to not be a large gap between the two genders. Computer use is becoming a larger part of our society and this is only reinforced by the fact that the ability of our population to use a computer over the five years rose 8.7 percentage points (47.3 percent in 1989 to 56.0 percent in 1994). So while more males report being able to use a computer, it is positive to see a steady incline in the overall ability of both genders being able to use a computer.

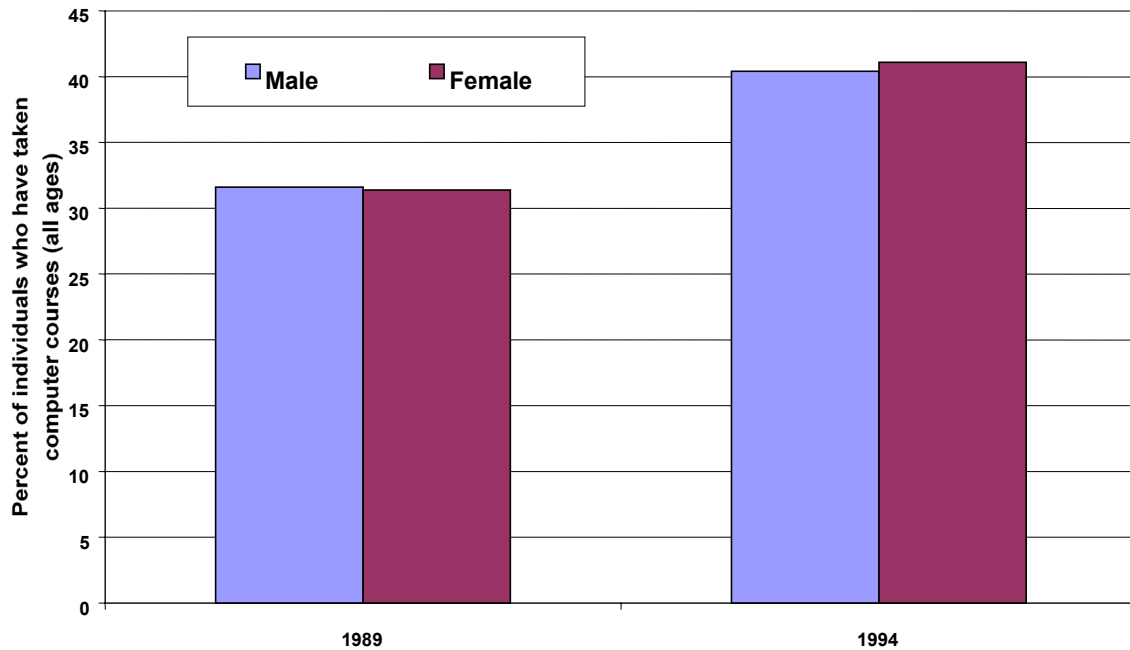


Source: Statistics Canada. General Social Survey, 1989, 1994.

The gender split on those who have taken computer courses is rather interesting (Figure 21). In 1989 both genders are at an equal level but over the five-year period we begin to see that a higher share of females (by a slight advance) have taken computer courses than males. Overall, there was an increase of 9.3 percentage points (both genders) that have taken computer courses over the five years.

Figure 21

**In recent years, more females have taken computer courses**

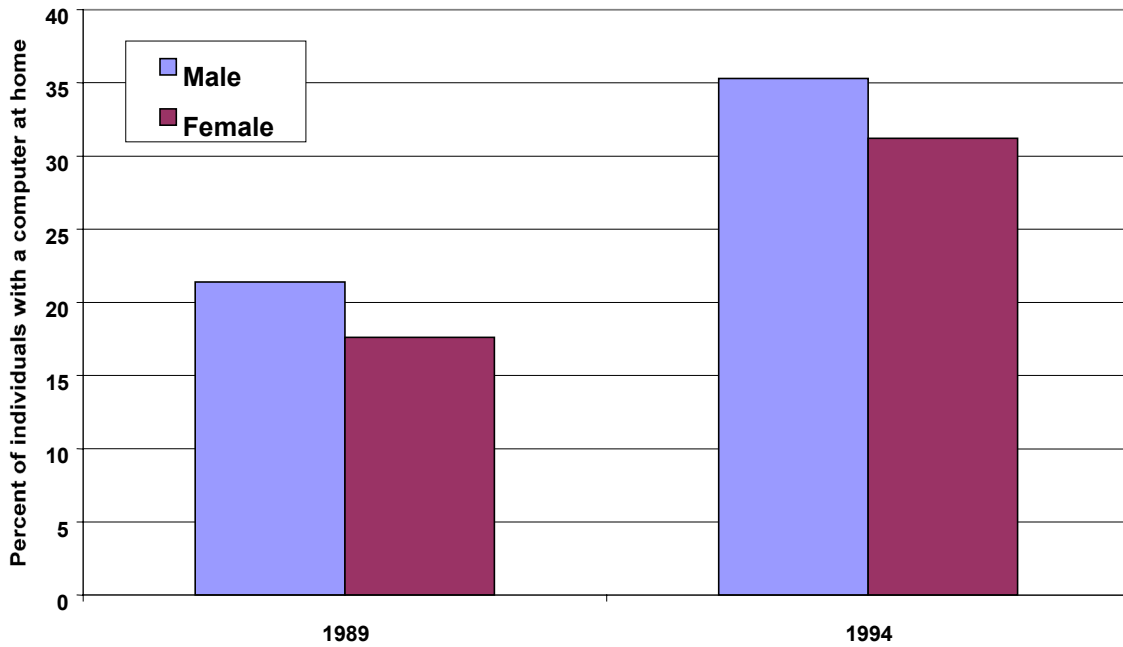


Source: Statistics Canada. General Social Survey, 1989,1994

The last item to be considered by gender is the share having a computer at home (Figure 22). When observing both genders we see there is an increase of 13.8 percentage points of individuals with a computer at home (19.4 percent in 1989 and 33.2 percent in 1994). In comparing the genders, we can clearly see that more males have a computer at home.

Figure 22

**Males are more likely to have a computer at home**

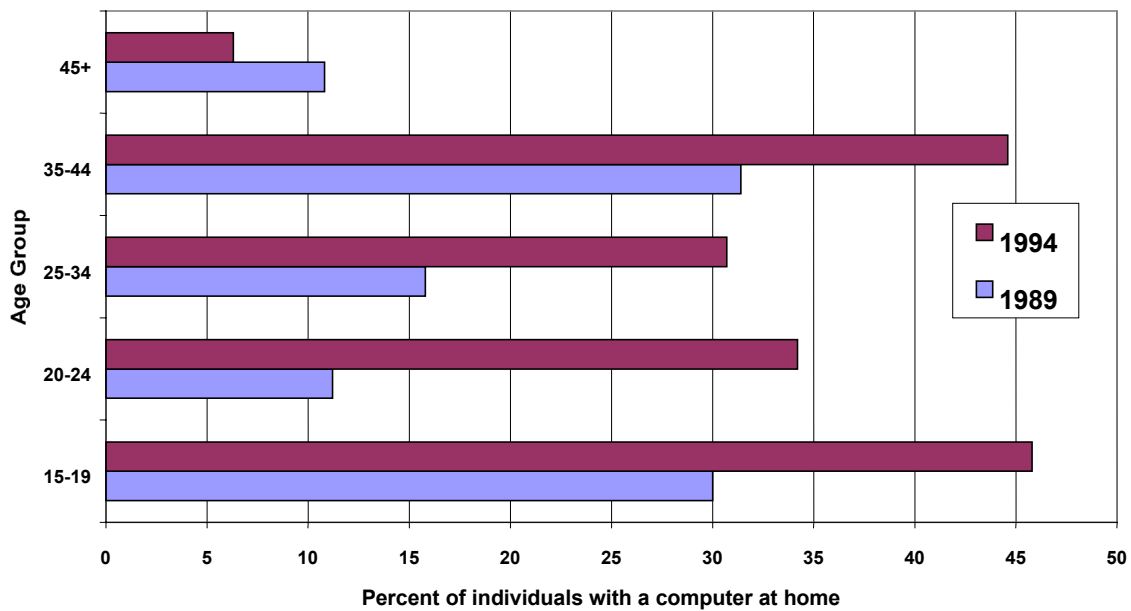


Source: Statistics Canada. General Social Survey, 1989,1994.

Yet, if we look solely at females we can see that they have encountered a large increase in the share of individuals with a computer at home. It is interesting to note the pattern of females by age class who have a computer at home. (Figure 23). There appears to be large increases in most age groups with the exception of those aged 45+, where we see a decrease. Yet it is interesting to note the large expansion within the younger age groups. We can conclude that there is an increasing demand for computers within the younger age groups.

Figure 23

**The percent of females with a computer at home increased for all individuals aged 44 and under**



Source: Statistics Canada. General Social Survey, 1989,1994.

As we have seen, computers are becoming more and more a part of our everyday lives. Regardless of gender, access to computers and the ability to use computers is on the rise. It is clear that there is an overall increase in computer use, computer courses, and home computers.

## Computer communications<sup>6</sup>

More and more organisations are providing computer communication services. In this section, we are going to look at the use of communication services by urbanisation class. On an overall basis, in 1997 the share of households with an individual who had ever used computer communications was 38.1 percent (Table 4). We can also gain the knowledge that a larger share of households with a younger head (<25 years of age) is more likely to have tried using computer communications (52.8 percent).

Table 4 – Percent of households with an individual who had ever used computer communications (from any location), Canada, 1997

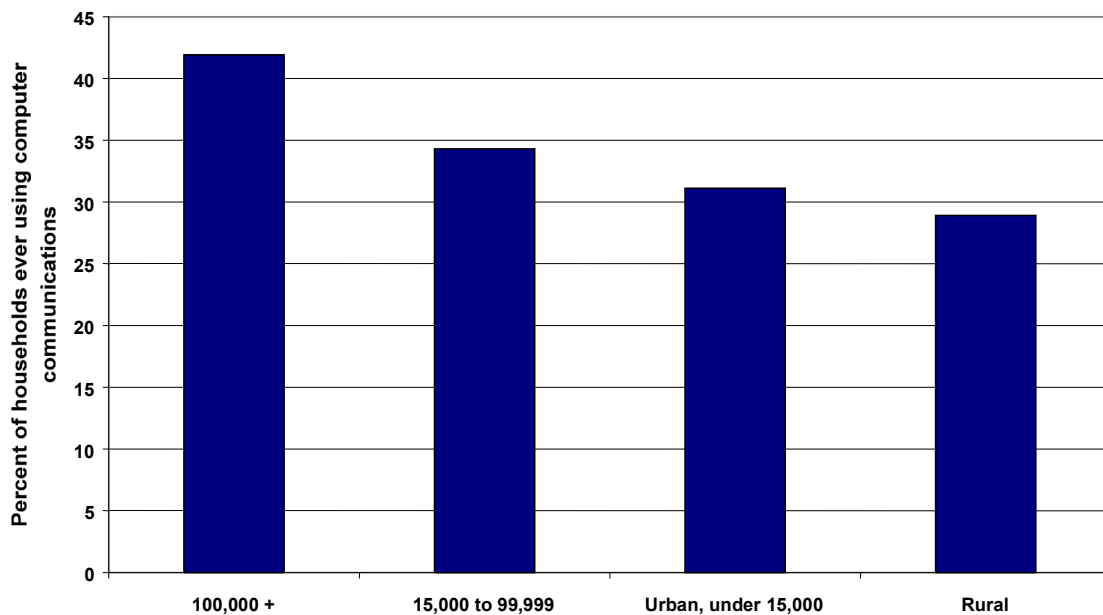
<b>Urbanization class</b>				
<b>100,000 and over</b>	<b>15,000 to 99,999</b>	<b>Urban, under 15,000</b>	<b>Rural</b>	<b>Total</b>
<b>Head of Household aged 25 and under</b>				
56.0	50.7	46.6	37.8	52.8
<b>Head of Household aged 26 to 39</b>				
50.9	45.1	43.2	36.9	47.9
<b>Head of Household aged 40 to 64</b>				
47.4	38.1	37.4	34.8	43.4
<b>Head of Household aged 65 +</b>				
10.8	7.0	6.0	5.7	8.9
<b>TOTAL households ever using computer communications</b>				
41.9	34.3	31.1	28.9	38.1

Source: Statistics Canada. Household Internet Use Survey, 1997.

<sup>6</sup> Computer communications is defined by the HIUS as “the use of a computer connected to a communications network for things like electronic banking, E-mail, and going on the Internet”.

In Figure 24 we can observe those households in large urban areas (100,000+) are more likely to have used computer communications, but surprisingly we see that a fair share of rural households also have tried using computer communications (28.9 percent).

Figure 24 **Rural residents report a low incidence of ever having used computer communications, Canada, 1997**



Source: Statistics Canada. Household Internet Use Survey, 1997.



When looking specifically at those households who use computer communications in a typical month from home (Table 5), we can see that 16 percent of Canadian households used it from home. The highest incidences of users came from households with a head between the ages of 26 and 39 (19.4 percent). This could partially be due to this age group having young families who use computer communications.

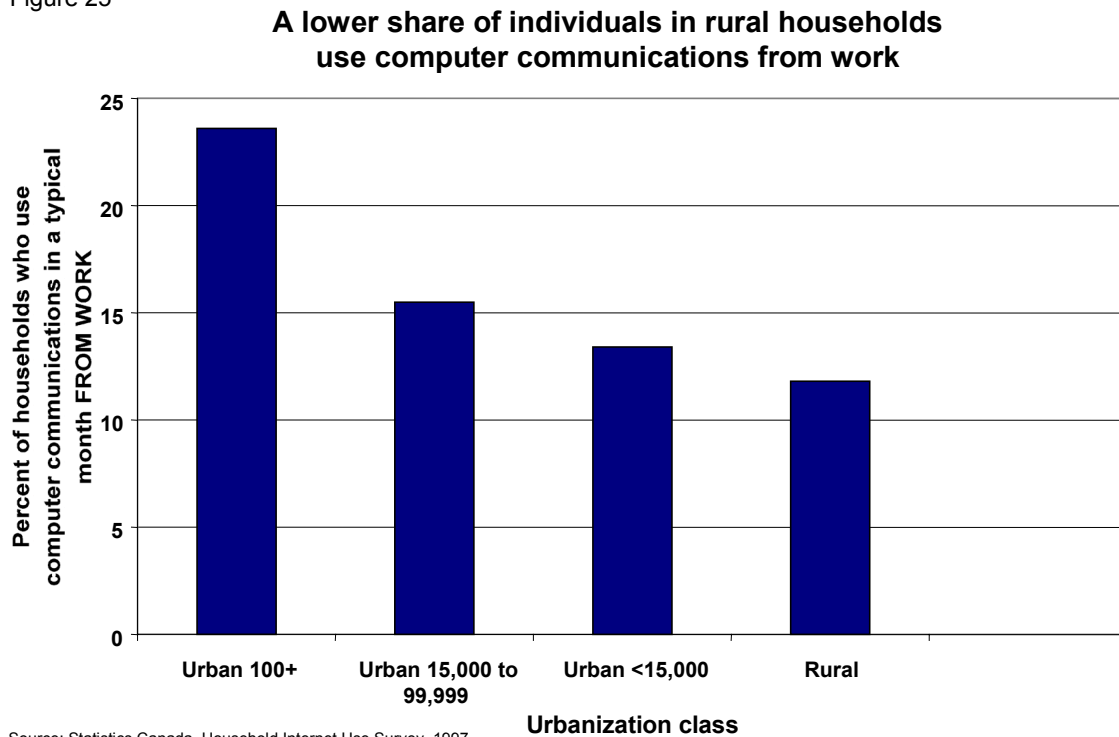
Table 5 – Percent of households with an individual who uses computer communications in a typical month from home, Canada, 1997

<b>Urbanization class</b>				
<b>100,000 and over</b>	<b>15,000 to 99,999</b>	<b>Urban, under 15,000</b>	<b>Rural</b>	<b>Total</b>
<b>Head of Household aged 25 and under</b>				
23.1	10.0	10.3	8.6	18.8
<b>Head of Household aged 26 to 39</b>				
21.9	18.3	12.7	11.2	19.4
<b>Head of Household aged 40 to 64</b>				
22.4	16.3	12.6	12.5	19.2
<b>Head of Household aged 65 +</b>				
4.1	2.9	1.5	2.6	3.4
<b>TOTAL households who use computer communications from home</b>				
18.7	13.5	9.6	9.9	16.0

Source: Statistics Canada. Household Internet Use Survey, 1997.

The share of households with an individual who uses computer communications from work is approximately 4 percentage points higher (19.9 percent) than those who use it from home. Not surprising is the fact that the smaller the urbanisation class is, the smaller is the percent of households who use computer communications (Figure 25).

Figure 25



Source: Statistics Canada. Household Internet Use Survey, 1997.

In looking at the number of households with one individual who uses computer communications in a typical month from school, we observe that 9.3 percent of Canadian households do use the service provided by schools (data not shown).<sup>7</sup> In comparison, only 3.7 percent of Canadian households use computer communication services provided by public libraries. In both cases, it is the population that has a head of household aged 25 and under that reports the larger amount of use of the computer communications. Many households with a

<sup>7</sup> Statistics Canada. Household Internet Use Survey, 1997.

head aged 25 and under may be students living on their own who access the Internet at their school or library.

### ***Various uses of computer communications from home***

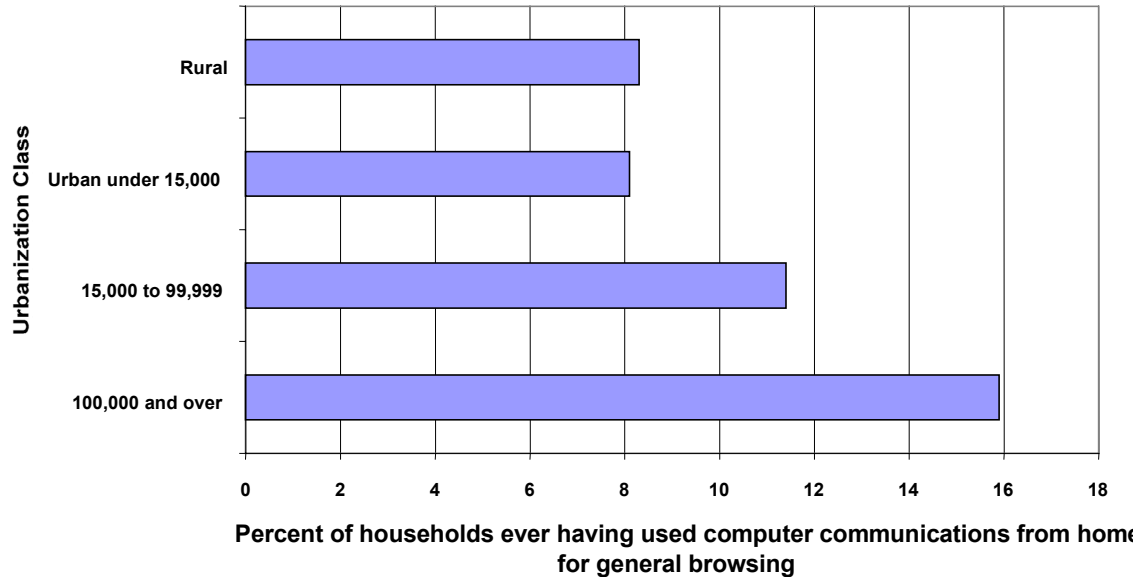
Computer communications is by no means strictly for business purposes – it is a world of its own. It offers a great number of services which on a daily basis continue to expand – you are now able to buy and sell items, research topics, obtain educational degrees and so on, all from your home computer. In this section we will investigate the use of home computer communications for email, shopping, general browsing and electronic banking.

General browsing of the Internet is always intriguing, as this is the way many users come across the different services that are provided to them. At the Canada level, 13.5 percent of all households have an individual who has used computer communications for general browsing. The smaller the urbanisation class, the less likely it is that households will have ever used their home computer for general browsing purposes.

E-mail seems to have taken over in offices, as it is less costly and time efficient and it reduces the amount of paper needed to communicate. It is also a cheaper method of communication as you can e-mail people worldwide. The use of e-mail from home is slowly making headway but it has taken time and will continue to take time for people to allow such technology into their home. In Canada, 13.3 percent (Figure 27) of households have ever used their home computer for e-mail purposes.

Figure 26

**Households in large urban centres (100K+) are more likely to have ever used computer communications from home for general browsing**

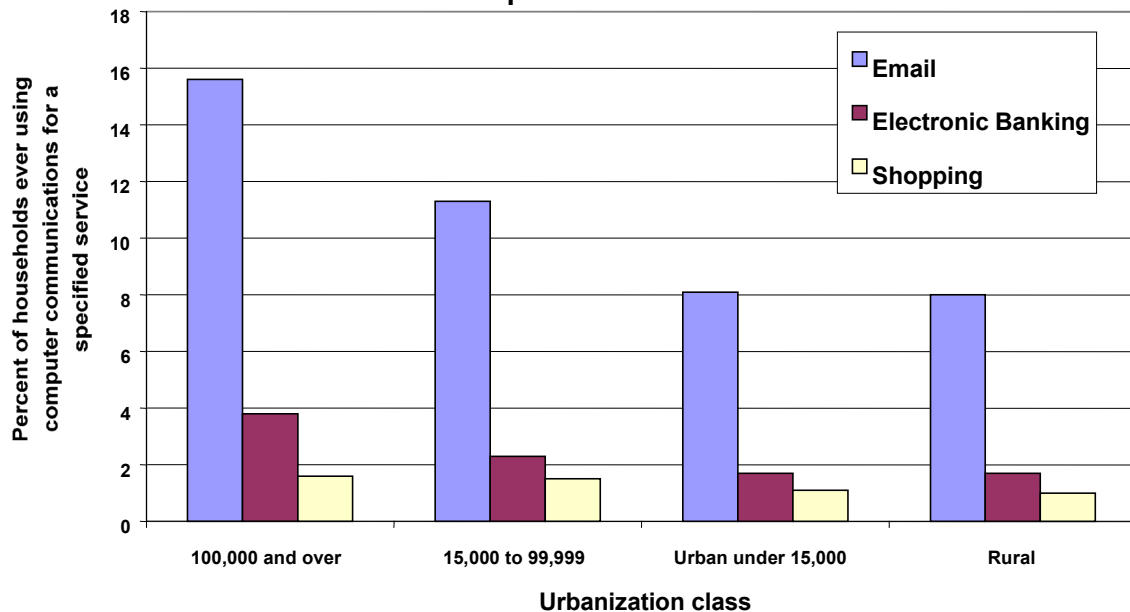


Source: Statistics Canada. Household Internet Use Survey, 1997.

The two other 'new services' that are available on the Internet and for which we have data are home shopping and electronic banking. Fewer households are using these services as, currently, most of the population is still very sceptical about doing 'private business' over the Internet. They are worried about the security of the system and who has access to the information. This explains why only 1.5 percent of households have used computer communications for home shopping and why 3.1 percent of households have used it for electronic banking (Figure 27).

Figure 27

**The larger the urbanization class the more likely it is that households have used computer communications for services provided**



Source: Statistics Canada. Household Internet Use Survey, 1997.

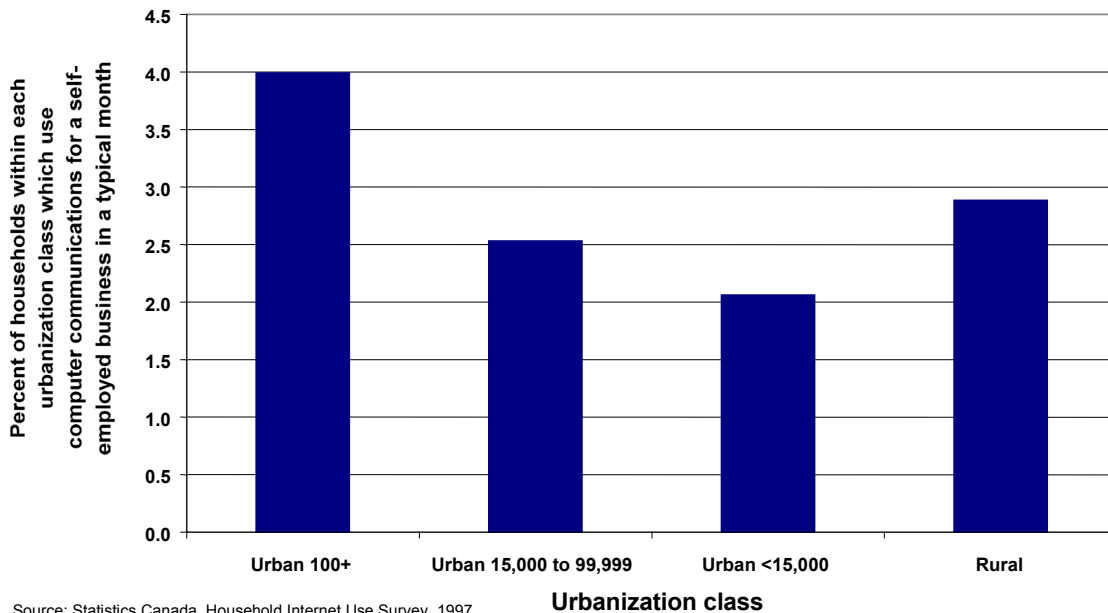
### ***Proportion of time spent on computer communications***

The amount of time spent working on computers is constantly increasing with technology becoming more user friendly. The question then becomes, what are computers being used for. Here we are going to inspect three different areas: self-employed business, employer-related business, and personal reasons.

In looking at the use of computer communications (in a typical month) for self-employed businesses (Figure 28), we can see that those households living in areas of 100,000 people and over are slightly more likely to use computer communications from home for a self-employed business. It is interesting to note that rural households are more likely to use computer communications for self-employed business than are households in small cities and small towns. Perhaps this is due to farm businesses using the Internet for information on prices, weather, etc.

Figure 28

**Households in rural areas are more likely to use computer communications for a self-employed business than those households in small cities and small towns**

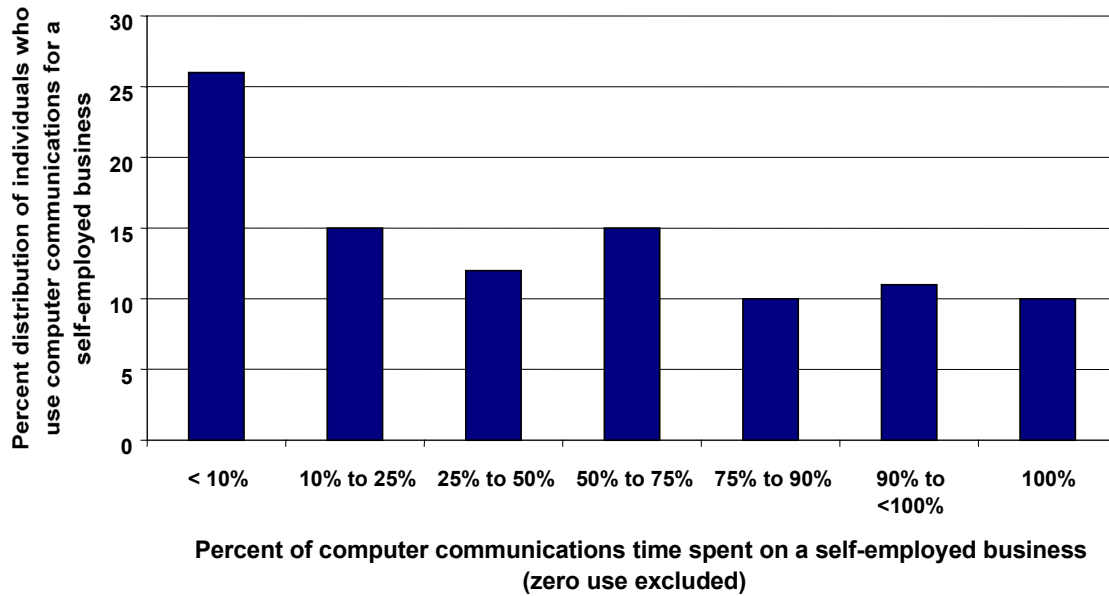


Source: Statistics Canada. Household Internet Use Survey, 1997.

If we look just at households where computer communications are used for a self-employed business, we see that about one-quarter of these households report that less than 10 percent of their computer communications time is related to the self-employment business (Figure 29).

Figure 29

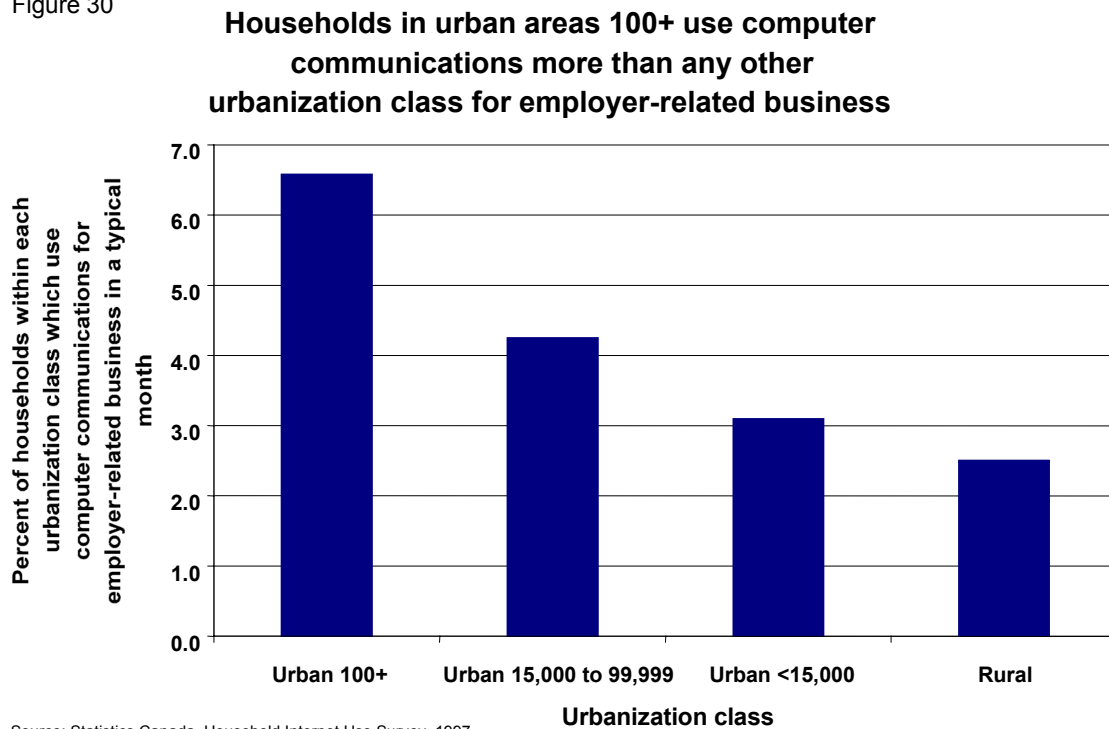
**A larger share of households spend less than 10 percent of their time spent using computer communications for employed business**



Source: Statistics Canada. Household Internet Use Survey, 1997.

Moving on to look at the proportion of time spent on computer communications for employer-related business uses, we see a pattern similar to the previous case for self-employed business. Those households living in areas of 100,000 people or more are more likely to use computer communication for employer-related business uses (Figure 30).

Figure 30

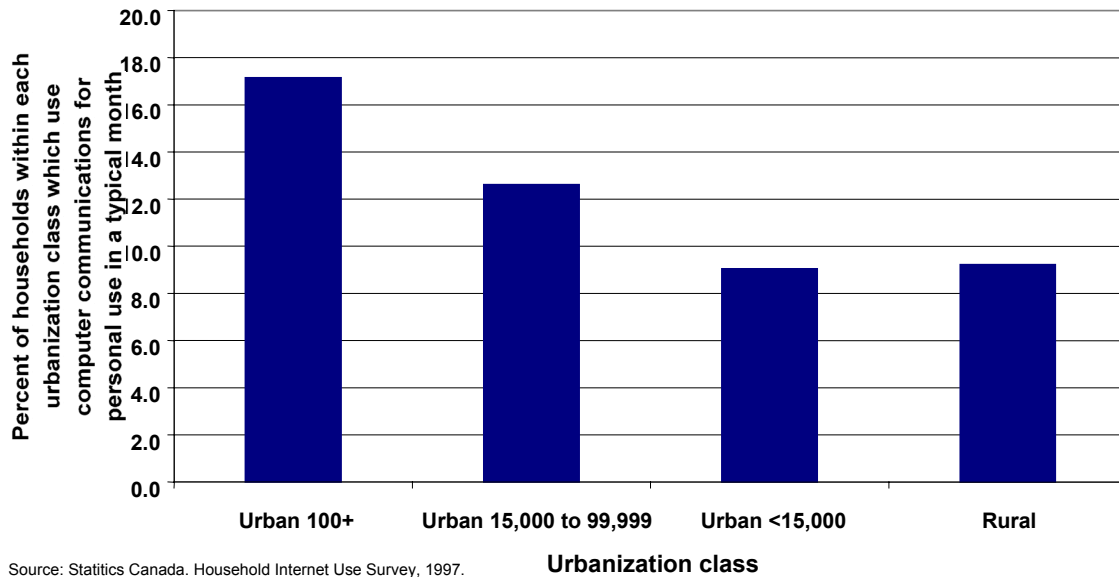


Source: Statistics Canada. Household Internet Use Survey, 1997.



Some view computer communications more as a leisure activity than business related, so it is interesting to see Figure 31 which shows us the proportion of households using computer communications for personal use. Here we can see that households in larger urban centres use computer communications for personal use more than any other urbanisation class.

Figure 31 **Households in urban areas (100,000 +) spend the largest proportion of their time on computer communications for personal use**



Source: Statistics Canada. Household Internet Use Survey, 1997.

## Summary

It is clear from these data that our nation, no matter how spread out, is coming together with the technology that is being made available. The common perception of 'rural' being disadvantaged has been proved to be only partially true. In many instances rural areas are behind the larger urban areas, but rural is not all that far behind and the trends are showing that rural areas (in some instances) are advancing in such a manner that the gap is closing.

Computer communications has really had an impact on individuals' way of life and the manner in which they carry out their daily activities. Computer communications has worked its way into the work place, households, schools, public libraries, just to mention a few. As seen, from 1989 to 1997, higher shares of individuals are taking advantage of computer communications. No matter what income bracket, age bracket or area of residence, all have a fair portion of individuals who access computer communications.

With the rate of change in the information technology industry these data are constantly changing. Continued research in this area will prove to be interesting, as many believe the number of users will continue to increase as technology increases. Only time will tell.



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