



# Rural and Small Town Canada ANALYSIS BULLETIN



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

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### HIGHLIGHTS

- ◆ The share of rural and small town individuals with a computer at home increased from 14 percent in 1989 to 22 percent in 1994. The largest increase was for individuals with at least high school graduation and for individuals in households with total income of \$40,000 or more.
- ◆ In 1989, 12 percent of rural and small town residents used a computer at work. This increased to 17 percent in 1994. Among these individuals, 40 percent were affected by the introduction of computers at work. Two-thirds noted that, as a result of the introduction of computers, an increase in skill level was needed to do their job.
- ◆ In 1997, 29 percent of rural households had one member who had used computer communications at least once (from any location). In 10 percent of rural households, one person used computer communications in a typical month *from home*. General browsing and e-mail were the most common uses while electronic banking and shopping were much less common.
- ◆ Only 3 percent of rural households reported 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, access to the Internet have been proposed as a way for rural residents to reduce the cost of distance. The purposes of this bulletin are to review the use of computers by members of rural households and, specifically, to review their use of the Internet.



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**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 cooperation and goodwill.

In the last 100 years, households have gone from having no phone, to a party line (a service still used by some rural Canadians), to a private line, and more recently, having the ability to link into computer communications at home. While still a novelty to some, 38.1 percent of Canadian households have reported that they have at least tried using computer communications.<sup>1</sup>

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

**Definitions**

**CMA** – Census Metropolitan Area. A CMA has an urban core of 100,000 or over and includes all neighbouring 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 neighbouring municipalities where 50 percent or more of the work force commutes into the urban 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 urbanisation classes cannot be replicated.

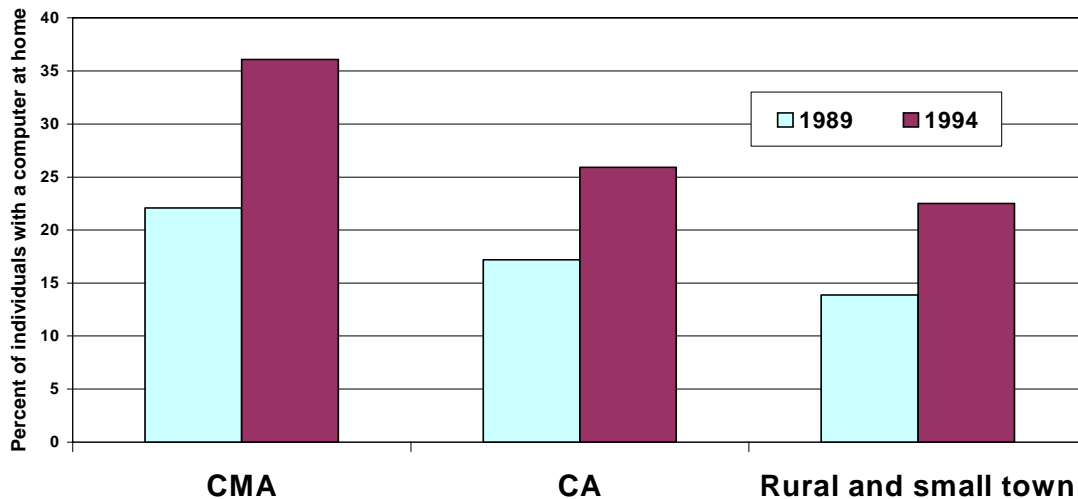
**Urban** – as published by the Census of Population, “urban” refers to the population in centres of 1,000 or more. In the HIUS, “urban” is, essentially, the total population within CMAs and CAs plus the small town component of RST areas.

## Computers at home

The total number of Canadians who have a computer at home is rising. In 1989, 19.4 percent of Canadians had a computer at home, which increased to 33.2 percent in 1994<sup>2</sup>. In 1997, the share of Canadian households with computers was 36.4 percent<sup>3</sup>. At the same time, within rural and small town (RST) areas, the share of individuals with a computer at home increased from 13.9 percent in 1989 to 22.5 percent in 1994 (Figure 1).

Figure 1

Fewer rural and small town residents have a computer at home, compared to residents in larger urban centres



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

For RST individuals with less than high school education, there was a slight increase in the share having a computer at home between 1989 and 1994 (Figure 2). A large increase occurred for those individuals who have graduated from high school and for those with some post-secondary education.

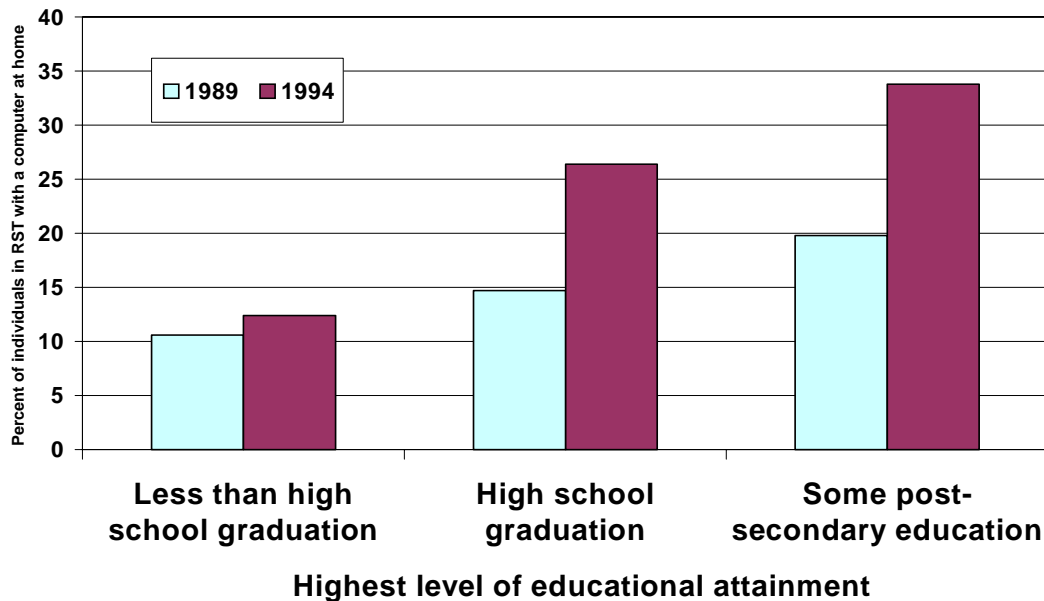
Another important pattern is the presence of computers at home by level of total household income. The share of individuals having a computer at home is greater in households with a higher income (data not shown). Between 1989 and 1994, the only substantive increases were for individuals in households with \$40,000 or more total household income.

<sup>2</sup> Statistics Canada, General Social Survey, 1989 and 1994.

<sup>3</sup> Statistics Canada, Household Internet Use Survey, 1997.

Figure 2

**Computer ownership increased for RST individuals with higher educational attainment**



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

### Ability<sup>4</sup> to use a computer

The pattern is consistent with the observations above on the presence of a computer in the household. Compared to urban residents, relatively fewer rural residents are able to use a computer (data not shown). Ability to use a computer is higher among individuals with higher income. While the ability to use a computer increased from 1989 to 1994 for individuals in all age groups, the ability to use a computer remained the highest for individuals in the younger age groups.

### Participation in computer courses

In 1989, 31.5 percent of the total Canadian population had taken a computer course, five years later (1994) that number had grown to 40.8 percent (data not shown). Two observations may be made. 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 those 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.

<sup>4</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?'.

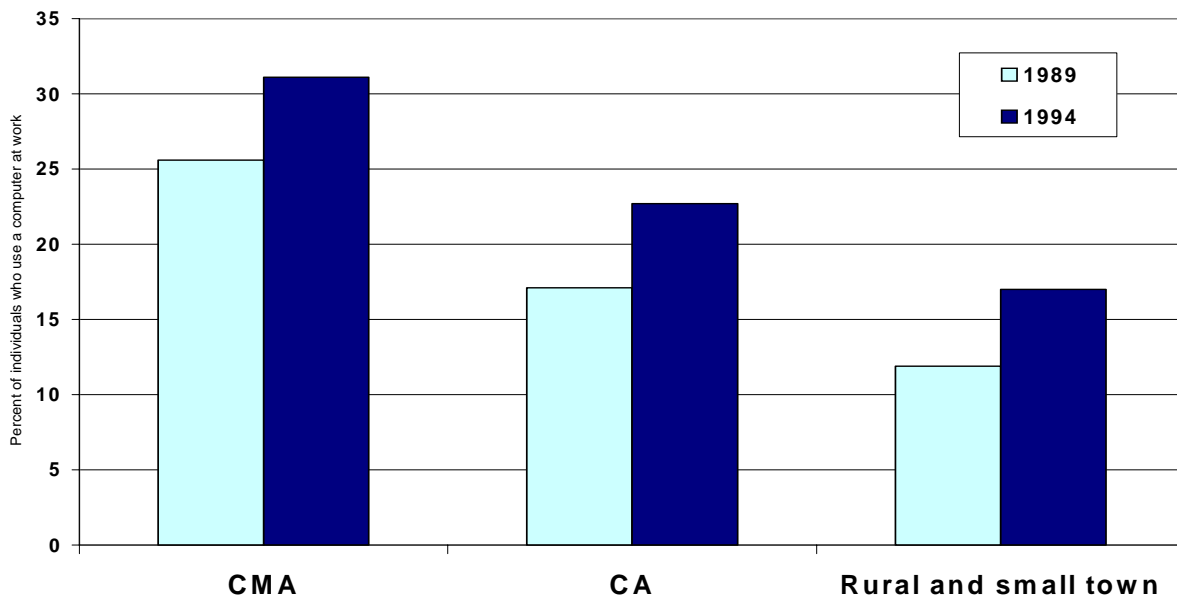
For those RST individuals in 1989 with less than high school graduation, 10.4 percent of them had taken a computer course. Among high school graduates, 30.7 percent had taken at least one course and 34.4 percent with some post-secondary education had taken a computer course. In 1994, those individuals 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, those individuals in RST who have attained their high school diploma experienced no change in participation in computer courses. Yet those with some post-secondary education experienced a 17.6 percentage point increase.

## Computers at work

Computers have been in the work place for many years but, until recently, few individuals have had a computer at their desk. In 1989, 21.2 percent of Canadians used a computer at work, this rose to 28.2 percent in 1994.<sup>5</sup> Computer use in the work place is increasing across all urbanisation classes (Figure 3).

**Figure 3**

**Fewer RST individuals use a computer at work, compared to individuals in larger urban centres**



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

On average, residents in each urbanisation class increased computer use at work by approximately 5 percentage points. 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

<sup>5</sup> Statistics Canada, General Social Survey, 1989 and 1994.

a 21 percent increase in the share in CMAs and a 33 percent increase in the share in CAs. Overall, RST is behind other areas in Canada, but RST computer use is growing at a slightly faster rate.

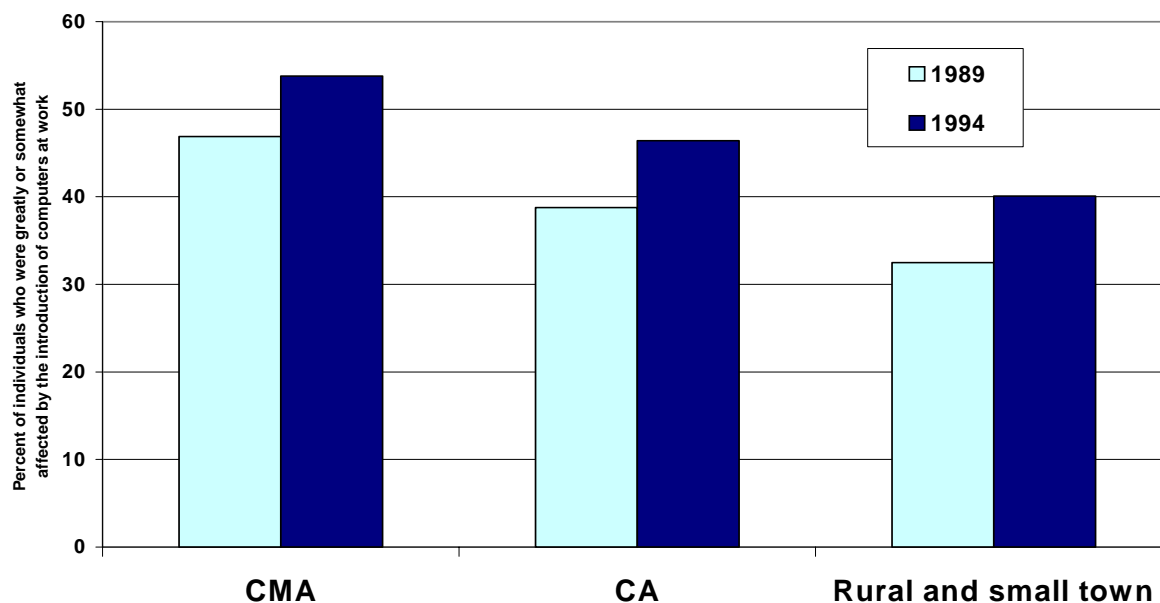
### **Impact of computers on skill level**

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 is whether the skills required would increase so that individuals would no longer be able to keep their jobs.

We have seen above that 17 percent of RST individuals used a computer at work in 1994. Among these individuals, 40 percent felt they were greatly or somewhat affected by the introduction of computers at work (Figure 4). Note that fewer RST individuals use a computer at work relative to individuals in larger urban centres (Figure 3) and that fewer RST individuals were impacted by the introduction of computers, relative to individuals in larger urban centres (Figure 4).

**Figure 4**

**In 1994, there was an increase in the share of individuals who were affected by the introduction of computers at work**



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

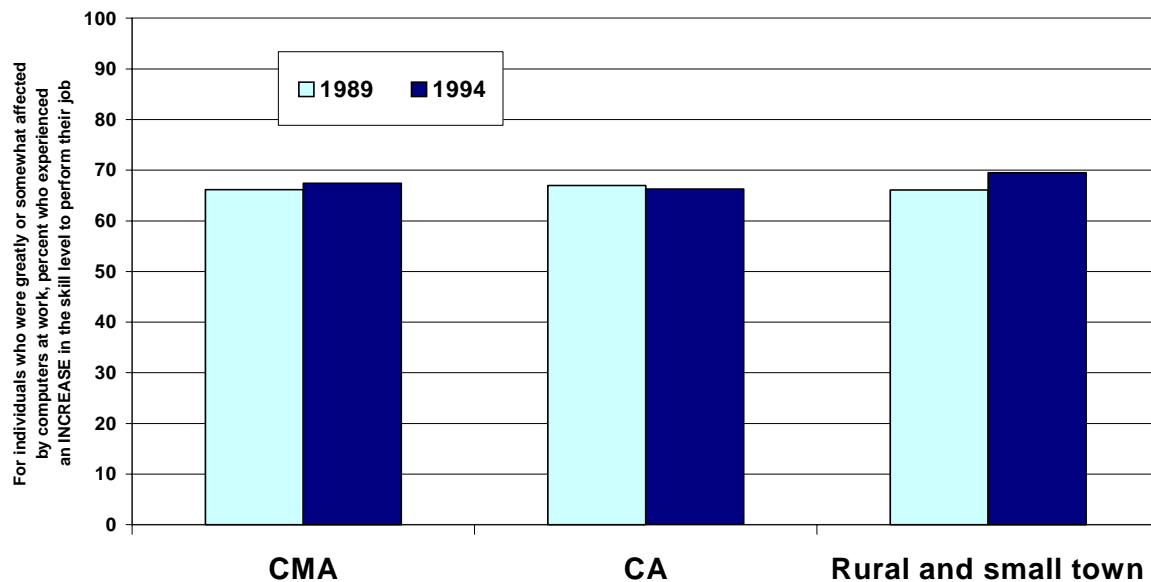
Now we look at only those who were greatly or somewhat affected by the introduction of computers at work. Regardless of urbanisation class, about two-thirds reported an increase in skill level was needed to do their job (Figure 5). In fact, no matter which way this is

examined (i.e. by education level, total household income or labour force status, etc.), about two-thirds reported that the impact of computers increased the skill level needed to perform their job.

**Figure 5**

**Regardless of urbanisation class, about two-thirds reported 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 and 1994.

One can conclude from these observations that the myth of computers turning people into robots is probably just that, a myth. Rather than reducing the skills needed to perform a job, computers have placed more emphasis on having a new set of skills to enhance their use. However, the impact on each individual will always vary to some degree.

Interestingly, the degree to which individuals experienced an increase in skill level did not appear to be associated with being unemployed (data not shown). In fact, a similar share of employed and unemployed individuals reported an increase in skill level. Individuals did not appear to be unemployed because the introduction of computers increased job skill levels.

### Income levels and computers at work

Computer use in the work place is more prevalent among individuals of high income households (data not shown). There was an increase in the share of individuals who use a computer at work between 1989 and 1994, but only for individuals in households with higher

incomes. Surprisingly, over the 1989 to 1994 period, individuals in the lower income brackets reported little change in the use of computers at work (for some income brackets, there was a decline) but for individuals in households with household income of \$40,000 or more, there was an increase.

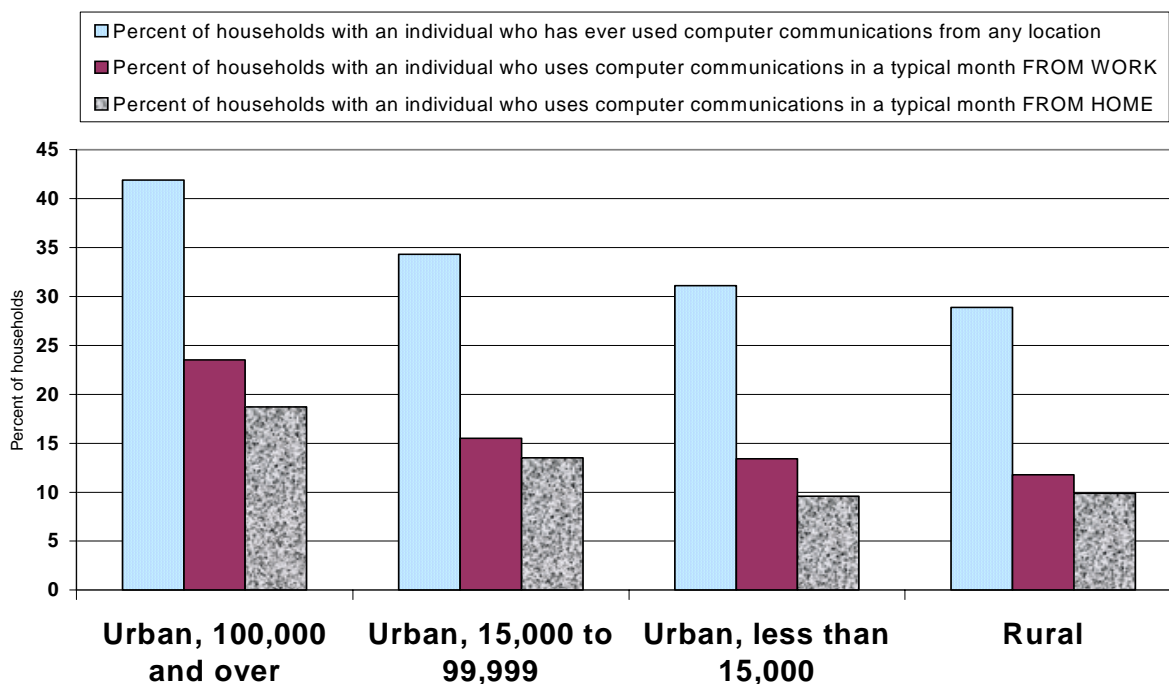
## Computer communications<sup>6</sup>

More and more organisations are providing computer communication services. In this section, we 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 (Appendix B). A larger share of households with a younger head of household (less than 25 years of age) was more likely to have tried using computer communications (52.8 percent).

Individuals in rural households are less likely to have used computer communications; nevertheless, a number of rural households also have tried using computer communications at least once (28.9 percent) (Figure 6).

**Figure 6**

### Fewer rural residents use the Internet



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”.



Within rural areas, 9.9 percent of households use computer communications in a typical month from home.

The share of rural households with an individual who uses computer communications from work is marginally higher (11.8 percent).

Regarding the use of 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 in a household with a head of household under 25 years of age who report larger use of the computer communications. Many households with a 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 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 examine the use of home computer communications for e-mail, 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. Among rural Canadian households, 8.2 percent of all households have an individual who has ever used computer communications for general browsing (Figure 7).

E-mail seems to have taken over in offices, as it is less costly 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. Among rural households, 8.0 percent have ever used their home computer for e-mail purposes.

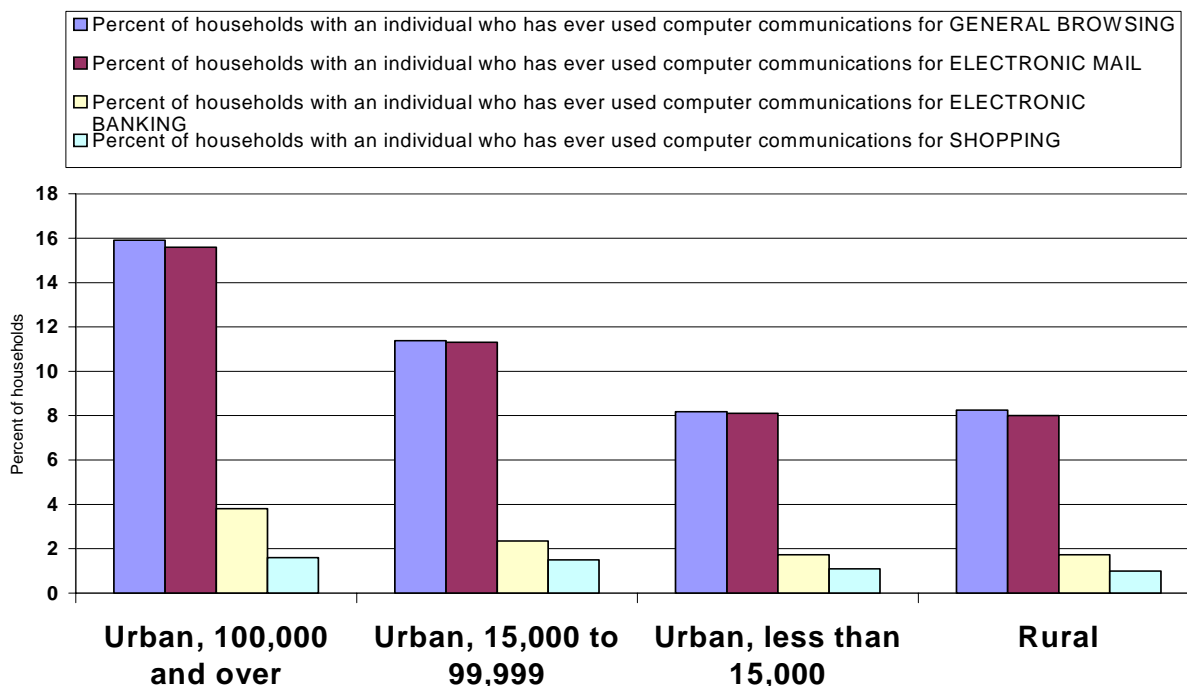
The two other ‘new services’ that are available on the Internet and for which we have data are home shopping and electronic banking. Fewer households are using these services as, currently, many individuals are still sceptical about doing ‘private business’ over the Internet. Some are worried about the security of the system and about who has access to the information. Only 1.0 percent of rural households have ever used computer communications for home shopping and only 1.7 percent of rural households have ever used it for electronic banking.

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

Figure 7

**Fewer rural residents use each Internet service, compared to residents in larger urban centres**



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

**What are computer communications being used for?**

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

In looking at the use of computer communications (in a typical month), 3.0 percent of rural households typically use computer communications from home for a self-employed business (data not shown). 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.

Similar to the previous case for self-employed business, about 2.0 percent of rural households use computers in a typical month for employer-related business purposes. Some view computer communications more as a leisure activity than business related. In 1997, 9.0 percent of rural households used computer communications for personal use.

## **To conclude**

The common perception of 'rural' being disadvantaged has been shown to be only partially true. In many instances rural areas are behind the larger urban centres, but often rural is not all that far behind, and in some instances, rural areas are closing the gap.

For background details, refer to the working paper: **Computer Use and Internet Use by Members of Rural Households** (Ottawa: Statistics Canada, Agriculture and Rural Working Paper No. 40, Cat. No. 21-601-MPE99040). To order, phone the Agriculture Division of Statistics Canada at 1 800 465-1991 or the Regional Reference Centre at 1 800 263-1136. Margaret Thompson-James is a student at the University of Waterloo and prepared this analysis during a co-op work term with Statistics Canada. Questions may be addressed to Ray Bollman at (613) 951-3747 (bollman@statcan.ca).

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(Vol. 1, No. 7)

**Appendix A**

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

Age of head of household	Urbanisation class				
	100,000 and over	15,000 to 99,999	under 15,000	Rural	All urbanisation classes
under 26	23	10	10	9	19
26 to 39	22	18	13	11	19
40 to 64	22	16	13	13	19
65 and over	4	3	2	3	3
All households	19	14	10	10	16

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

**Appendix B**

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

Age of head of household	Urbanisation class				
	100,000 and over	15,000 to 99,999	under 15,000	Rural	All urbanisation classes
under 26	56	51	47	38	53
26 to 39	51	45	43	37	48
40 to 64	47	38	37	35	43
65 and over	11	7	6	6	9
All households	42	34	31	29	38

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