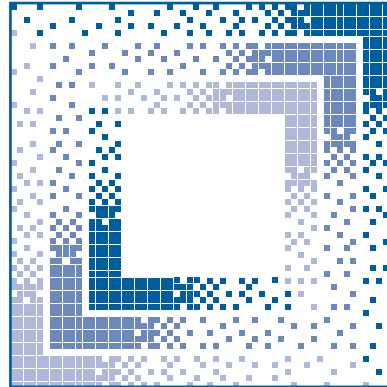




Catalogue no. 56-505-XIE

Overview: Access to and Use of Information Communication Technology

March 2001



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Statistics Canada
Housing, Family and Social Statistics Division

Overview: Access to and Use of Information Communication Technology

March 2001

Published by authority of the Minister responsible for Statistics Canada

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March 2001

Catalogue no. 56-505-XIE

Frequency: Occasional

ISBN 0-662-30214-1

Ottawa

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Introduction

This report presents a brief overview of the information collected in Cycle 14 of the General Social Survey (GSS), "Access to and Use of Information Communication Technology". For a detailed analysis, please see *Changing our ways: Why and how Canadians use the Internet* (catalogue No. 56F0006XIE). The General Social Survey has two principal objectives: first to gather data on social trends in order to monitor changes in Canadian society over time, and second, to provide information on specific social issues of current or emerging interest. The content for the 2000 GSS was technology use, specifically the Internet, and its impact on Canadians. An entire General Social Survey has never before been dedicated to this topic. However, questions on technology use did appear on the 1989 GSS (cycle 4) and the 1994 GSS (cycle 9) as well as the 1998 GSS (cycle 12) on Time Use.

This is the first time that Statistics Canada has collected detailed information on individual use of technology. Data from this cycle complements other Statistics Canada surveys on this topic, particularly the annual Household Internet Use Survey (HIUS). The HIUS asks about household use of the Internet and is administered to a subsample of households in the Labour Force Survey.

The emergence of the Internet has led to many questions about how this technology affects Canadians. Cycle 14 of the GSS measured the nature and extent of computer and Internet use based on behaviour over the previous 12 months. Questions were asked about the location of access and use including home, work, school and other public locations. The questionnaire collected additional information on training, the impact of technology on work, children's use of the Internet, e-mail as a communication tool, security and privacy concerns, time displacement, volunteering and civic participation. Socio-demographic variables, including education, income and language, were also measured.

The target population included all people aged 15 and over, except full-time residents of the Yukon, Nunavut and the Northwest Territories. Data was collected each month from January 2000 to December 2000. Over this period, a total of 25,090 people were successfully interviewed, yielding a response rate of 80.8%. For further information on methods and data quality, please refer to the section at the end of this report.

Questions or comments pertaining to this report should be addressed to:

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Table 1A:
**Percentage of the population aged 15 and over using technology in the past 12 months, by urban/
rural, Canada and provinces, 2000**

	Total population	%						
	(000s)	Internet	Internet connection at home ¹	E-mail	Computer	Fax machine	Cellular telephone	Automated teller machine (ATM)
Canada	24,566	52.8	42.2	46.7	65.3	50.3	51.8	78.2
Urban	19,380	55.0	44.1	48.9	67.0	51.6	52.5	79.2
Rural	5,186	44.9	35.2	38.1	58.7	45.6	49.3	74.8
Newfoundland	441	43.5	30.7	36.7	55.3	42.3	46.9	76.5
Urban	254	52.3	38.0	45.2	61.7	45.9	53.1	81.1
Rural	187	31.5	20.7	25.3	46.6	37.4	38.7	70.1
Prince Edward Island	110	48.2	34.4	42.0	60.2	45.6	48.8	77.9
Urban	51	50.2	37.7	46.7	62.8	47.0	48.0	83.2
Rural	58	46.5	31.7	37.9	58.1	44.5	49.6	73.3
Nova Scotia	762	52.0	40.7	46.4	63.4	43.6	51.9	79.0
Urban	416	57.2	44.9	51.7	68.3	49.8	53.1	81.4
Rural	346	45.7	35.6	40.2	57.4	36.2	50.4	76.0
New Brunswick	612	44.5	32.7	37.5	59.0	40.5	51.5	74.7
Urban	331	50.4	38.7	44.2	63.7	42.5	51.5	78.5
Rural	280	37.5	25.6	29.6	53.5	38.2	51.6	70.3
Quebec	5,975	45.6	33.8	38.2	60.6	49.4	41.1	80.9
Urban	4,657	47.9	35.8	40.5	63.1	51.2	42.5	82.4
Rural	1,318	37.4	26.5	29.9	51.7	43.1	36.3	75.8
Ontario	9,333	54.7	46.7	49.3	66.3	48.4	53.3	75.8
Urban	7,822	55.7	47.6	50.5	66.7	48.9	53.8	75.7
Rural	1,511	49.6	42.0	43.1	64.2	45.6	51.0	76.3
Manitoba	895	46.0	32.4	39.3	60.9	43.7	48.9	75.0
Urban	664	48.3	33.5	42.0	63.1	43.8	47.0	78.5
Rural	232	39.3	29.4	31.3	54.6	43.2	54.2	64.9
Saskatchewan	790	50.1	34.3	41.9	63.1	45.2	57.0	73.8
Urban	513	53.4	37.7	46.1	67.2	44.7	56.1	76.6
Rural	277	43.8	28.0	34.2	55.4	46.0	58.6	68.6
Alberta	2,353	60.3	47.7	54.2	71.5	57.5	64.4	81.0
Urban	1,922	61.6	48.2	55.8	72.2	57.2	62.2	82.3
Rural	430	54.4	45.4	47.2	68.3	59.0	74.3	75.4
British Columbia	3,296	61.2	49.6	55.7	71.4	59.8	58.1	81.0
Urban	2,749	62.7	50.5	56.9	72.8	60.9	59.5	81.5
Rural	547	53.3	45.1	49.6	64.2	54.3	51.1	78.2

¹Individual has Internet connection at home but may not use it.

Note: Totals exclude "Not stated".

Source: Statistics Canada, General Social Survey, Cycle 14.

Table 1B:
Percentage of the population aged 15 and over using technology in the past 12 months, Canada and selected census metropolitan areas, 2000

	Total population	Internet	Internet connection at home ¹	E-mail	Computer	Fax machine	Cellular telephone	Automated teller machine (ATM)
	(000s)	%						
Canada	24,566	52.8	42.2	46.7	65.3	50.3	51.8	78.2
St. John's	141	59.7	43.6	52.2	69.0	51.9	59.2	85.2
Halifax	288	65.4	51.2	59.9	74.3	56.8	62.6	87.9
Saint John	102	54.7	40.0	45.5	64.5	43.3	53.1	81.6
Québec	540	46.8	37.3	40.3	60.3	48.5	38.2	82.6
Montréal	2,767	51.0	39.3	44.0	65.7	55.5	45.8	82.5
Ottawa-Hull	866	62.7	52.7	58.6	74.7	57.2	56.9	81.7
Toronto	3,832	55.8	48.7	50.7	67.0	53.2	56.2	75.4
Hamilton	556	55.5	50.6	47.2	69.5	47.4	56.4	77.4
Winnipeg	534	49.4	35.3	43.2	62.3	42.9	47.3	78.9
Regina	143	58.9	40.3	51.6	72.5	50.6	56.8	82.6
Saskatoon	187	64.0	49.8	59.0	77.2	52.0	56.9	84.3
Calgary	752	67.4	55.0	63.6	76.8	61.7	63.8	85.1
Edmonton	753	59.9	48.8	53.2	71.5	54.8	62.2	80.8
Vancouver	1,662	63.2	53.7	58.6	73.4	63.3	64.5	81.0
Victoria	289	63.5	48.0	58.2	70.7	57.5	52.2	79.4

¹Individual has Internet connection at home but may not use it.

Note: Totals exclude "Not stated".

Source: Statistics Canada, General Social Survey, Cycle 14.

Table 2:
Percentage of Internet users, aged 15 and over, by selected socio-demographic characteristics, Canada, 2000

	Total population			User		
	Total	Male	Female	Total	Male	Female
	(000s)			%		
Canada	24,566	12,093	12,473	52.8	56.1	49.6
Age group						
15 to 24	4,134	2,113	2,021	84.5	85.6	83.4
25 to 34	4,376	2,206	2,171	66.1	68.2	63.9
35 to 44	5,292	2,654	2,638	60.3	62.2	58.4
45 to 54	4,348	2,164	2,184	50.7	52.5	48.8
55 and over	6,416	2,956	3,460	18.7	23.4	14.8
Education						
University degree	4,466	2,349	2,117	79.3	83.1	75.1
College diploma/certificate	5,607	2,732	2,876	57.5	59.8	55.4
Some university or college	3,503	1,674	1,829	69.4	71.2	67.7
High school diploma	4,399	2,068	2,330	41.2	44.7	38.1
Less than high school	6,120	3,056	3,064	30.9	34.3	27.4
Household income						
Less than \$30,000	3,834	1,618	2,216	32.8	33.4	32.4
\$30,000 to \$49,999	4,002	2,014	1,988	49.9	50.0	49.8
\$50,000 to \$79,999	4,469	2,489	1,980	65.5	65.1	66.1
\$80,000 or more	3,675	2,211	1,465	80.5	80.6	80.4
Language						
English only	16,007	7,810	8,196	58.5	61.8	55.3
French only	5,380	2,668	2,712	43.9	47.4	40.4
Other language	2,982	1,532	1,450	40.0	43.6	36.1
Urban/rural						
Urban	19,380	9,513	9,867	55.0	59.3	50.7
Rural	5,186	2,581	2,606	44.9	44.4	45.5

Note: Totals exclude "Not stated".

Source: Statistics Canada, General Social Survey, Cycle 14.

Table 3A:
Percentage of Internet users, aged 15 and over, by sex and age group, Canada and provinces, 2000

	Total Population	Sex		Age group				
		Male	Female	15-24	25-34	35-44	45-54	55+
	(000s)	%						
Canada	24,566	56.1	49.6	84.5	66.1	60.3	50.7	18.7
Newfoundland	441	44.9	42.1	80.2	56.6	47.8	38.5	8.0 *
Prince Edward Island	110	46.9	49.5	78.0	59.2	59.0	50.7	11.9 *
Nova Scotia	762	55.2	49.0	89.2	68.8	65.4	44.9	13.3
New Brunswick	612	45.9	43.1	81.8	49.8	51.5	44.3	12.2 *
Quebec	5,975	49.5	41.8	77.3	59.6	51.2	43.7	14.3
Ontario	9,333	57.7	51.7	87.3	67.0	63.7	51.4	20.2
Manitoba	895	47.8	44.2	79.5	62.7	50.1	40.4	13.8
Saskatchewan	790	51.9	48.3	76.8	64.7	61.0	50.8	14.9
Alberta	2,353	63.2	57.3	86.6	73.4	65.2	59.0	21.7
British Columbia	3,296	65.7	56.8	91.6	73.7	68.2	62.5	27.5

* Figures to be used with caution. Coefficient of variation between 16.6% and 33.3%.

Note: Totals exclude "Not stated".

Source: Statistics Canada, General Social Survey, Cycle 14.

Table 3B:
Percentage of Internet users, aged 15 and over, by education, Canada and provinces, 2000

	Total population	Education				
		University degree	College diploma/certificate	Some university or college	High school diploma	Less than high school
	(000s)	%				
Canada	24,095	79.3	57.5	69.4	41.2	30.9
Newfoundland	439	78.4	52.7	69.5	32.8	21.1
Prince Edward Island	110	75.0	53.4	62.6	37.1	29.4
Nova Scotia	758	79.7	55.5	70.2	43.1	29.4
New Brunswick	608	77.3	46.3	68.8	34.6	26.7
Quebec	5,953	74.8	51.6	64.2	33.8	21.5
Ontario	9,069	79.8	59.5	70.7	41.3	34.7
Manitoba	875	73.1	52.0	64.1	39.7	26.5
Saskatchewan	777	78.4	62.2	62.2	45.5	29.2
Alberta	2,302	87.4	65.2	72.6	50.6	37.8
British Columbia	3,202	81.9	61.6	74.4	47.3	44.0

Note: Totals exclude "Not stated".

Source: Statistics Canada, General Social Survey, Cycle 14.

**Table 4:
Percentage of Internet users, aged 15 and over, by selected types of Internet activity, Canada and provinces, 2000¹**

	Total users	E-mail	E-banking	Purchased goods or services	Information about goods and services	Health information	Chat service	News-groups or listserv	News sites
	(000's)	%							
Canada	12,981	83.6	22.7	23.7	74.3	45.9	30.0	15.7	54.7
Newfoundland	192	81.3	17.4	19.6	73.5	56.8	35.7	16.4	52.9
Prince Edward Island	53	82.3	16.9	18.2	71.5	55.5	28.1	16.9	46.5
Nova Scotia	396	85.9	23.6	23.4	74.8	54.0	33.8	19.2	55.0
New Brunswick	272	78.8	16.6	19.3	72.2	49.2	33.3	14.6	53.5
Quebec	2,723	78.2	21.9	19.3	73.9	40.4	34.0	11.6	55.7
Ontario	5,103	84.5	23.6	25.6	73.1	46.7	29.2	16.8	56.9
Manitoba	412	78.7	16.6	19.8	71.2	46.6	30.2	12.8	51.5
Saskatchewan	396	81.1	16.3	20.3	73.4	45.2	26.2	13.5	44.8
Alberta	1,418	86.9	23.4	25.9	78.2	43.6	30.5	16.1	53.0
British Columbia	2,016	87.8	25.1	26.2	76.2	49.2	25.1	18.5	51.9

¹ Percentage that has ever used the Internet for these activities, except e-mail, which has been used in the past 12 months.

Note: Totals exclude "Not stated".

Source: Statistics Canada, General Social Survey, Cycle 14.

Methods

The target population for Cycle 14 of the GSS was all persons 15 years of age and over residing in Canada, excluding:

1. residents of the Yukon, Nunavut and Northwest Territories;
2. full-time residents of institutions.

In the survey, all respondents were contacted by telephone. Households without telephones were therefore excluded; however, persons living in such households represent less than 2% of the target population. Survey estimates have been adjusted (i.e., weighted) to account for persons without telephones.

Data for Cycle 14 of the GSS were collected monthly from January 2000 to December 2000 inclusive. The sample was evenly distributed over the 12 months to represent seasonal variation in the information. The sample was selected using the Elimination of Non-Working Banks technique of Random Digit Dialling (RDD).

From the 31,063 households in the GSS Cycle 14 sample, 25,090 usable responses were obtained, producing a response rate of 80.8%.

Data Limitations

The figures which appear in this report are estimates based on data collected from a small fraction of the population (roughly one person in 980) and are subject to error. The error can be divided into two components: sampling and non-sampling error.

Sampling error is the difference between an estimate derived from the sample and the one that would have been obtained from a census that used the same procedures to collect data from every person in the population. The size of the sampling error can be estimated from the survey results and an indication of the magnitude of this error is given for the estimates in this report. If the estimated sampling error is greater than 33% of the estimate, it is considered too unreliable to publish and the symbol '—' is printed in table cells where this occurs. Although not considered too unreliable to publish, estimates with an estimated error between 16.6% and 33.3% of the related estimate should be "qualified" and used with caution. These are identified with an asterisk.

All other types of errors, such as coverage, response, processing, and non-response, are non-sampling errors. Many of these errors are difficult to identify and quantify.

Coverage errors arise when there are differences between the target population and the surveyed population. Households without telephones represent a part of the target population that was excluded from the surveyed population. To the extent that this excluded population differs from the rest of the target population, the estimates will be biased. In general, since these exclusions are small, one would expect the biases introduced to be small. However, since there are obvious correlations between telephone ownership and use of communications technology, and hence with a number of questions asked on this survey, the biases may be more significant than the small size of the groups would suggest.

To the extent that the non-responding households and persons differ from the rest of the sample, the estimates will be biased. The overall response rate in terms of questionnaires that were complete enough to be useful for analysis was 80.8%. Non-response could occur at several stages in this survey. There were two stages of information collection: at the household level and at the individual level. As such, some non-response occurred at the household level, some at the individual level. Non-response also occurs at the level of individual questions so the overall response rate for some questions will be below 80.8%. For most questions, the response rate was high, with non-response indicated in the data files.

Glossary of terms

Internet

The Internet connects computers to the global network of networks for electronic mail services, file transfer, and information search and retrieval.

Internet user

Person who has used the Internet, for personal, work or school activities in the past 12 months. Internet users may access the Internet through the computer or other means (i.e. television, telephone).

Internet non-user

A non-user is someone who has not used the Internet from any location in the past 12 months.

Internet connection at home

There is a physical Internet connection through the telephone line, cable or other means in the person's home but the individual may or may not use it.

E-banking

Electronic banking refers to carrying out banking services, such as transferring funds, viewing account balances and paying bills, through computerized systems on the Internet.

E-mail

Electronic mail is a service allowing the transmission of files or text messages between two or more computer stations.

E-mail user

Person who has used electronic mail for personal, work or school activities in the past 12 months. E-mail users may access e-mail through the computer or other means (i.e. television, telephone).

Fax machine

This refers to a stand-alone machine only. Use of fax software or a fax modem is excluded.

Chat service

There are two types of chat services: the interactive "real time" service where you can "chat" directly with other Internet users and a threaded discussion board similar to newsgroups.

Newsgroup/Listserv

A newsgroup is an electronic bulletin board. Items are posted and responded to via e-mail. A listserv is like a mailing list that automatically distributes e-mail messages from one member to all other members of a list.

Education:

University Degree

This includes people who have completed a bachelor or undergraduate degree, teacher's college, a degree in medicine, dentistry, veterinary medicine, optometry, a masters or earned doctorate.

College Diploma or Certificate

This includes people who have completed a diploma or certificate course from a community college, CEGEP or nursing school or a diploma or certificate course from a trade, technical or vocational school, or business college.

Some university or college

This includes people who have completed some courses from a university, community college, CEGEP, nursing school, trade, technical or vocational school or business college but have not earned a degree, diploma or certificate.

Less than high school

This includes people who have completed up to 10 years of school but who have not graduated from high school.

Language

This refers to the language most frequently spoken at home.

Other language

Other includes other language only, English and French equally, English and other equally, French and other equally and English, French and other equally.