CANADIAN Social Trends

Summer No. 85
2008

Features

$24 Canada • Catalogue no.11-008
Summer 2008 • No.85

Statistics Canada Statistique Canada

Canada

How to REACH us

Editorial Office

E-mail: **cstsc@statcan.ca**
Fax: 613-951-0387
Write: Editor-in-Chief,
Canadian Social Trends
7th floor, Jean Talon Building
Statistics Canada
Ottawa, Ontario
K1A 0T6

For service to subscribers

E-mail: **infostats@statcan.ca**
Phone: 1-800-267-6677
Fax: 1-877-287-4369
Write: Statistics Canada, Finance,
6-H R.H. Coats Bldg.
150 Tunney's Pasture Driveway
Ottawa, Ontario
K1A 0T6

How to order Statistics Canada publications

E-mail: **infostats@statcan.ca**
Phone: 1-800-267-6677
Fax: 1-877-287-4369
Online: http://www.statcan.ca/bsolc/english/bsolc?catno=11-008-XPE

Need more information about Statistics Canada products?

E-mail: **infostats@statcan.ca**
Phone: 1-800-263-1136
Online: **www.statcan.ca**
TTY Line: 1-800-363-7629

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, the Agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1-800-263-1136. The service standards are also published on www.statcan.ca under "About us" > "Providing services to Canadians."

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.

Summer 2008 No. 85

CST

Canadian Social Trends

June 2008

Published by authority of the Minister responsible for Statistics Canada

Indexed in the **Academic ASAP, Academic Search Elite, Canadian Periodical Index, Canadian Serials, Expanded Academic ASAP, PAIS International, Periodical Abstracts, Periodical Abstracts Research II, ProQuest 5000, Proquest Research Library** and available on-line in the **Canadian Business and Current Affairs Database**.

ISSN 0831-5698 (Print)
ISSN 1481-1634 (Electronic)

Canadian Social Trends

Features

Life in metropolitan areas

The city/suburb contrast: How can we measure it?

by Martin Turcotte

Like many other industrialized countries, Canada is a very highly urbanized nation. In 2006, just over 80% of the population was living in urban areas, and roughly two thirds of Canadians were living in a census metropolitan area. The social phenomena, dynamics and issues that affect these large and sometimes very large urban areas touch the everyday lives of many people.

In a new series of articles, *Canadian Social Trends* is planning to address a number of subjects related to life in metropolitan areas. We will attempt to shed some light on the differences and similarities between Canada's major census metropolitan areas (CMAs), focusing on their component neighbourhoods and districts. Specifically, we will contrast neighbourhoods that have typically urban traits with neighbourhoods that have characteristics more typical of the suburbs or suburban areas. In so doing, we will compare central neighbourhoods and more peripheral neighbourhoods, as well as high-density and low-density neighbourhoods. We will also refer to concepts such as the city centre, the central municipality and the suburban municipality.

All these concepts are important in distinguishing between qualitatively different districts within urban areas – different not only in form but also in the types of people and households that comprise them. Since these concepts can be confusing and are not commonly used, they should be defined as clearly as possible. That is the main objective of this article.

In the first part, we will explore four possible approaches to the question of differentiating urban from suburban neighbourhoods. In the second part, we will use census data and selected classification tools to show how the various types of neighbourhoods differ in terms of the characteristics of their populations. A number of supplementary text boxes also describe alternative approaches which, though not detailed, may prove useful in identifying other differences between neighbourhoods.

Two geographic concepts that are of great importance – census metropolitan area (CMA) and census tract (CT) – are defined briefly in the text box entitled "Statistics Canada's standard geographic definitions". It should be noted that at present, Statistics Canada does not have a classification that differentiates between districts or neighbourhoods within CMAs. While the various approaches presented in this article suggest directions that may eventually lead to the development of such a typology, they should not be regarded as standard classifications at this time.

To be or not to be a suburb: A question without an answer?

Both in everyday speech and in urban research, we often refer to suburbs as opposed to the city, urban neighbourhoods or the city centre. It is probably clear in the minds of most people who live in one of Canada's urban areas whether they live "in the city" or "in the suburbs". Yet the concepts of suburb and city are seldom understood in the same way by everyone and are sometimes used very loosely.

CST Statistics Canada's standard geographic definitions

Census metropolitan area (CMA)

A CMA is an area consisting of one or more adjacent municipalities situated around a major **urban core**. A CMA must have a population of at least 100,000, and the urban core must have a population of at least 50,000.

The **urban core** is a large **urban area** around which the boundaries of a CMA or a census agglomeration (CA) are defined. An **urban area** is an area with a population of at least 1,000 and no fewer than 400 persons per square kilometre.

Canada currently has 33 CMAs, up from 27 in 2001. The eight largest CMAs, in descending order by population size, are Toronto, Montréal, Vancouver, Ottawa-Gatineau, Calgary, Edmonton, Québec City, and Winnipeg.

For more details, please visit the following Web page: http://www12.statcan.ca/english/census06/reference/dictionary/geo009a.cfm

Census tract (CT)

A CT closely matches what most people consider to be a neighbourhood. When we refer to the concept of a neighbourhood in this series, we will be referring indirectly to the concept of a CT.

CTs are small, relatively stable geographic areas that usually have a population of 2,500 to 8,000 people. They are located in CMAs with an urban core population of 50,000 or more as determined in the previous census. Within each CMA, a committee of local specialists (planners, health and social workers, and educators) delineates CTs in conjunction with Statistics Canada. At the time of its creation, the CT is defined so as to ensure that the population is as homogeneous as possible in terms of socio-economic characteristics, such as similar economic status and social living conditions. In addition, the shape of a CT is as compact as possible, with its boundaries following permanent, easily recognizable physical features.

Note to readers

It is important to note that the standard Statistics Canada classification concepts of urban core, urban fringe and rural fringe are not retained in this discussion because they do not allow us to distinguish in sufficient detail between the different areas of an urban region – one of the most important objectives of this series. For example, in 2006 in the CMA of Vancouver, 92% of the total population lived in an area classified as urban core (the remaining 8% belonged to the urban and rural fringes). But this extensive urban core includes both business districts and peripheral residential neighbourhoods, areas which have very little in common. The situation is similar, if not almost identical, in other CMAs. In short, readers should be careful not to confuse the concepts discussed here with the urban core/urban fringe/rural fringe classification.

The central municipality can be differentiated from the suburbs in a number of ways. We will try to impose some order on these ideas by presenting four ways of categorizing them, based on four criteria for delineation: 1) administrative or political boundaries; 2) the boundaries of the city's centralcore, not to be confused with the urban core, which is defined in "Statistics Canada's standard geographic definitions"; 3) distance from the city centre; and 4) neighbourhood density. As we will see, each one has its strengths and weaknesses.

Administrative or political boundaries: the central municipality and the suburban municipalities

In the first and probably most common method of delineating the centre from the suburbs, the municipality that lends its name to a metropolitan area is regarded as the central municipality, while all the other municipalities, towns and localities in the metropolitan area form the suburbs.[1] From this perspective, the suburbs have some degree of political autonomy (for example, a mayor and elected representatives) even though they are referred to as suburban municipalities of the central municipality.[2]

Two advantages of this method are its simplicity and the possibilities it offers for the analysis of local and metropolitan policies. For example, someone may wonder whether a larger number of suburban municipalities in a CMA are producing different urban development policies from those adopted by a smaller number of municipalities. Another advantage is that people generally recognize fairly readily the territorial boundaries of the municipalities in their region and can identify their own municipality. However, this first approach presents

some significant disadvantages for the analytic and comparative perspective developed in this series, and it will not be used very often.

The biggest drawback is probably the fact that the central municipality's administrative boundaries can provide an inaccurate picture of the forms of urban development in a CMA. In some CMAs, people who live a dozen kilometres from the city centre, in neighbourhoods that have all the qualities of traditional suburban neighbourhoods, are nevertheless residing in the central municipality. Conversely, in other CMAs, people living only a few kilometres from the central business district, in very densely populated neighbourhoods, are regarded as living in a suburban municipality. The reason for these differences is that municipal history, and therefore municipal administrative boundaries, vary substantially from CMA to CMA. As a result, the percentage of the CMA's total population living in the central municipality as opposed to the suburban municipalities will also vary a great deal from one metropolitan area to another (Chart 1).

For example, according to 2006 Census data, Calgary's seven suburban municipalities accounted for only 8% of the CMA's total population. The same was true for the CMA of Winnipeg, where the suburban municipalities also made up only 9% of the CMA's total population. The situation was completely different in the CMA of Vancouver, where 73% of the total population lived in the suburban municipalities.

While the difference in the percentages provides some idea of the extent of administrative fragmentation in these metropolitan areas, it tells us very little about the types of neighbourhoods in which Calgary and Winnipeg residents live compared with Vancouver residents. In addition, comparing the central municipalities of the various CMAs can lead to serious misinterpretations if we fail to take into account how each one is divided.[3]

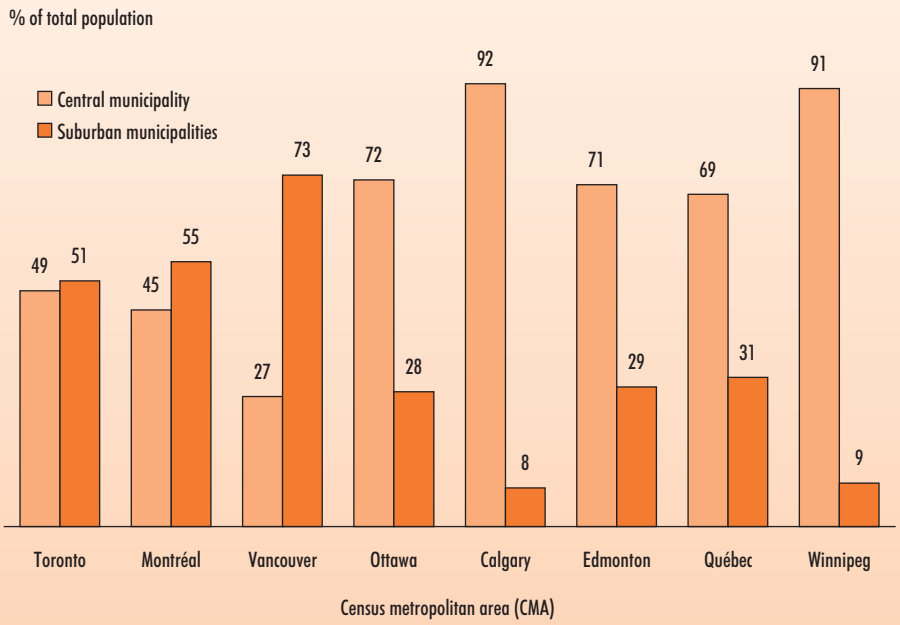
A second major disadvantage of the approach based on the central municipality's administrative boundaries, in terms of sociological and geographic analysis of CMA populations, is that boundaries can change abruptly at any time, especially during municipal mergers or reorganizations. Neighbourhoods and localities that had long been considered suburbs can suddenly become part of the central municipality, even though there has been no substantive change in their areas' nature or their social and economic ties to the centre.

For example, the town of Pierrefonds is now included in one of the wards of the new municipality of Montréal, although it was considered an independent suburban municipality before the municipal mergers of 2001. The same thing happened to the Borough of East York in the CMA of Toronto: before 1998 it was a suburb and today it is an integral part of the central municipality. In the Ottawa area, the former suburban municipalities of Kanata, Orléans, Gloucester, Vanier and Rockcliffe are now part of the central municipality. Of course, it is always possible that further municipal reorganizations will occur in the future, making the distinction between central and suburban municipalities even fuzzier than it is now.

Yet, despite these limitations (particularly from the perspective of comparing CMAs), the distinction between central and suburban municipalities remains, for some purposes, the most pertinent and useful way to present various statistics. It is important for decision-makers and policy-makers to have a variety of demographic and socio-economic information about the population of their own municipality as well as adjacent municipalities.

On the other hand, the approach based on the administrative or political boundaries of the central municipality is probably not the

CST Chart 1 Municipal administrative boundaries vary substantially from CMA to CMA, so the proportion of the population living in the central municipality also varies a great deal



Source: Statistics Canada, 2006 Census.

most appropriate for studying certain social, demographic and economic differences between suburban and urban neighbourhoods.

Suburbs as zones outside the city's central core

A second approach to delineating and categorizing the residential parts of urban areas involves classifying neighbourhoods and localities on the basis of whether they are part of the *city's central core* (commonly known as the "inner city") and perhaps how far they are from the city's central core. In this approach, a locality, a neighbourhood or some other geographic entity situated outside the core (or more than a specified distance from the core) will be considered part of the suburbs.

But how do we delineate this central core? Although there are several options, one in particular has been used by geographers in the past: it defines the city's central core as consisting of the central business area of the municipality that lends its name to the CMA plus the adjacent old residential neighbourhoods.[4]

In general, the central business district or business centre, especially in the largest CMAs, is the neighbourhood in which the bulk of the service sector activities are concentrated, particularly management, finance and business services.[5] More broadly, the city centre is the neighbourhood that contains (or used to contain in the case of those CMAs where other business centres have grown up on the periphery) the heaviest concentrations of commercial and office activity in an urban area.

However, there are no universal criteria for easily, clearly and precisely identifying and marking the inner city boundaries of all CMAs in Canada.[6] For example, in a study of employment distribution in Canada's four largest CMAs, researchers identified the central business district as consisting of all neighbourhoods having a relatively large number of jobs and a relatively small number of residents.[7]

Other geographers have argued that while central business districts have no formal boundaries, they can generally be identified from the clear predominance of office space over dwellings.[8] There are also definitions with more formal status; for example, the Charter of the City of Montréal, which establishes the municipality's legal status, explicitly delimits the central business district with specific street names.[9]

Nor is it much simpler to identify the second component of the inner city, that is, the older neighbourhoods adjacent to the central business district. In some studies, older neighbourhoods are defined as those which have a large proportion of dwellings built before a specific date (typically neighbourhoods with many dwellings constructed before 1946). The criteria for determining what constitutes a large proportion of dwellings may vary from study to study.[10]

This method of distinguishing between the suburbs and the inner city composed of the city centre and the adjacent older neighbourhoods, however appealing it might be, will not be used in this series of articles. There are simply too many difficulties associated with establishing formal rules for defining the central business district and the adjacent older neighbourhoods in CMAs that differ in history, size and geography.[11]

The city centre versus the peripheral neighbourhoods

The third approach, which was selected for this series, is different from the previous one in that it does not explicitly distinguish between the central business district, the older neighbourhoods and the suburbs. Instead, it distinguishes between neighbourhoods and residential areas on the basis of their distance from a central location in the city centre. For the purposes of the series, that central location will be the census tract (CT) containing the city hall of the central municipality.

This method, which has been used in a Statistics Canada study of employment and commuting in CMAs,[12] was selected because in the various CMAs, the city hall of the central municipality is usually located where employment is concentrated in the inner city (or at least very close to it) and the city's historical centre. While it is difficult to identify the inner city's most central point (particularly when we are dealing with a number of CMAs, each of which is different), it is safe to say that the location of city hall is a very good approximation.[13]

From that central point, we draw concentric rings of 0 to less than 5 kilometres, 5 to 9 kilometres, and so on. The various neighbourhoods are then categorized according to their distance from the census tract that contains the city hall of the central municipality. The farther out we go, the more peripheral the neighbourhoods are.

Usually, new suburban areas with above-average population growth are in the most peripheral zones of their CMA. However, it is sometimes difficult to measure the extent of such urban growth when all we have is information about population growth in the various municipalities. As mentioned previously, some CMAs have far more peripheral municipalities than others, making the expansion seem more pronounced or less pronounced depending on the way the region is divided administratively. Using distance from the city centre as a criterion helps avoid some of those problems, because the classification can remain constant over time. For example, we can learn how many people in a particular CMA lived in a neighbourhood more than 20 kilometres from the city centre in 2006 compared with 2001.

When we use the classification by neighbourhood distance from the city centre in this series, we will be discussing central neighbourhoods in contrast to peripheral neighbourhoods: the greater the

distance, the more peripheral the neighbourhood.

One of the disadvantages of this method is that there is wide variation in the physical size of CMAs. For example, the total area of the Toronto CMA is about 5,900 square kilometres, compared with 4,200 square kilometres for Montréal and 2,900 square kilometres for Vancouver. In contrast, Victoria encompasses just 700 square kilometres, and Windsor about 1,000 square kilometres. Hence, in the largest CMAs, neighbourhoods that might be considered "central" may be more than 5 kilometres from the city centre. This is not likely to be the case in small CMAs.

Similarly, the percentage of the population living within 5 kilometres of the city centre will generally be greater in small CMAs than in very large CMAs such as Toronto or Montréal. In addition, the population will tend to appear more centrally concentrated in small CMAs. Lastly, the concepts of central and peripheral neighbourhoods will be subject to constant revision: in some cities, neighbourhoods that are considered central today were regarded as peripheral when the cities started to expand. Likewise, today's peripheral neighbourhoods may be viewed as central in a few years.

Consequently, we need to exercise caution in interpreting the differences between a CMA's central and peripheral neighbourhoods. Using 5 kilometres as the width of the concentric rings is arbitrary, as any other distance would be. Nevertheless, as we will see later in some actual examples, there are some very good reasons for using distance from the city centre to identify and study the differences and similarities between neighbourhoods in Canada's central metropolitan areas.

Differentiating neighbourhoods by density and dwelling types

While classifying neighbourhoods by their distance from the city centre may be useful in studying some subjects, it does conceal differences between the various types of neighbourhoods. Some central neighbourhoods have features that are much more typical of postwar suburban neighbourhoods than of traditional urban neighbourhoods: they have low population density, dwellings that are more typical of suburbs, such as single houses, and so on. Conversely – and this is becoming more common today – some neighbourhoods that are referred to as "suburban" or peripheral neighbourhoods because they are some distance from the city centre have characteristics that are more traditionally associated with central neighbourhoods: relatively high population density, multiethnic population, rental housing, and so on.[14] Increasing the diversity of suburban areas by giving them some of the features of traditional urban neighbourhoods such as higher density and mixed use is an important objective of "new urbanism", a major trend in modern urban planning.[15]

To take account of the present and future heterogeneity of peripheral and central neighbourhoods, we will introduce various distinctions based on neighbourhood characteristics in this series. Because we are interested in comparing neighbourhoods that have characteristics typical of modern suburbs with neighbourhoods that have features of more traditional urban areas, population density will be one of the key criteria. Even though some outlying areas have apartment buildings and row houses, low population density is a very important feature of most suburbs of large Canadian cities.[16]

Neighbourhood density can be measured in a variety of ways. In the metropolitan areas series, we will refer to a neighbourhood as low density when at least two thirds of the occupied housing stock comprises single and semi-detached houses and mobile homes, that is, dwellings that take up the most space or area per occupant.[17] Conversely, we will refer to neighbourhoods as having a high density when their housing stock consists primarily of multiple dwellings, condominiums, apartment buildings and row houses. These dwelling types, especially apartment buildings, are all associated with much higher population densities.[18]

We could have used what seems at first glance to be a more direct measure of neighbourhood (CT) population density: the number of residents per square kilometre. However, that measure would have presented problems in a number of situations. Some CTs cover a relatively large area, but only a small part of it is residential; the rest may be taken up by industries, natural barriers such as bodies of water, or other activities demanding lots of space like airports. Consequently, even if the population density is fairly high in the residential portion, the CT's overall density may be low, thereby presenting a skewed picture of its density level.

Using the proportion of all occupied dwellings in a neighbourhood that are single houses, semi-detached houses and mobile homes to measure density avoids the methodological pitfall associated with the simple estimate of population per square kilometre. The measure of density based on predominant housing type is not influenced by the proportion of the CT that is truly residential. Moreover, in Canada and North America generally, the presence of single and semi-detached houses in a neighbourhood is an important factor in differentiating between residential suburbs and more urban areas.[19]

Examples of the use of density and distance to the city centre to differentiate between neighbourhoods

To illustrate all the concepts discussed above, we have prepared eight maps using 2001 Census data (see Appendix) that can be updated when all 2006 Census data are available. We have also prepared eight data tables, which can be found at www.statcan.ca/english/freepub/11-008-XIE/2008001/article/10459-en.htm, to show how useful it is

to be able to distinguish between neighbourhoods based on housing density and distance from the city centre – at least with regard to the distinctive features of the various types of neighbourhoods.

For demonstration purposes, we created three density categories based on the percentage of the neighbourhood's dwellings that are single or semi-detached houses or mobile homes. High-density neighbourhoods have less than 33.3% of this dwelling type; medium-density neighbourhoods have between 33.3% and less than 66.6%; and low-density neighbourhoods have 66.6% or more.

To separate neighbourhoods by distance to the city centre, we established six categories. Central neighbourhoods are less than 5 kilometres from the city centre. Other neighbourhoods are regarded as peripheral, with the most peripheral being 25 kilometres or more from the city centre.

Nearly half of Canadians in metropolitan areas live in low-density neighbourhoods

Table A.1 shows how the population of CMAs is distributed across the various types of CMA neighbourhoods. For all CMAs combined, nearly half the population in 2001 was living in low-density neighbourhoods, which are most typical of postwar suburbs. In contrast, only one person in five was living in a more typically urban neighbourhood, which is composed primarily of apartment buildings and other types of high-density housing.

However, the proportions varied substantially from CMA to CMA. For example, more than two-thirds of Calgary residents (67%) lived in low-density neighbourhoods, compared with only about one-third of Montréal residents (34%).

The differences between residents of the various CMAs are even more pronounced with respect to the distance between their home and the city centre. Almost one-third of Toronto residents lived in neighbourhoods 25 kilometres or more from the central municipality's city centre (the CT containing Toronto's city hall); the same was true for only 11% of Ottawa-Gatineau residents and 3% of the residents of Québec City. These differences in the proportion of people living close to or far from the city centre reflect not only the CMA's history and size but also its unique geography. One obvious example is Toronto: being bounded to the south by Lake Ontario, no residential development is possible in that direction.

The maps of Canada's eight largest metropolitan areas (see Appendix) are particularly informative concerning the density and distance indicators. They show that neighbourhood population density generally declines with distance from the city centre (the city centre is marked with a star on the map). In other words, the farther from the centre, the greater the proportion of single and semi-detached houses and mobile homes in the neighbourhood.

The maps show that the correlation between low density and distance from the city centre is not entirely perfect; in most large urban areas, some peripheral neighbourhoods have high residential density, and some central neighbourhoods have low density. To take this into account, we can combine the density and distance indicators into a single indicator that provides additional precision (Table A.1).[20] This composite indicator is capable of differentiating between neighbourhoods with the most typically urban features (high-density central neighbourhoods) and those that have two typically suburban traits (peripheral and low density).

Table A.2 uses this composite indicator to illustrate with data what the maps hinted at: that the majority of people (but not everyone) who live in neighbourhoods close to the city centre live in high-density neighbourhoods. This is true in

CST Why have three density categories and not five or six?

Most articles in this series will rely exclusively on survey data rather than census data. Though this point may seem technical and of little consequence, it is actually crucial. Statistics Canada's social surveys have far fewer respondents than the Census: roughly 20,000 for the General Social Survey, compared with the entire population of Canada for the "short" Census and more than 6 million for the more detailed Census questionnaire. The advantage of survey data is that they cover a wider variety of subjects than census data; their disadvantage is that compromises have to be made about the level of geographic detail that can be published when presenting results.

Consequently, it is impossible to generate CMA profiles using survey data that are as detailed as the profiles that could be prepared with census data. One of the main reasons for using three groups to differentiate neighbourhoods by housing density (low, medium and high) is the importance of being able to use the indicator with survey data. In the future, however, we may still conduct analyses based on more detailed density categories when drawing on census data. The same logic applies to the categories for distance to the city centre that we have selected.

most large CMAs, and it is especially evident in Montréal and Québec City. In 2001, 93% of the people who lived less than 5 kilometres from the centre of Montréal and 80% of the people in Québec City's central neighbourhoods were living in high-density neighbourhoods. In contrast, the proportions were 59% for Ottawa-Gatineau and 55% for Toronto.

Conversely, people living in more peripheral neighbourhoods tended to be concentrated in low-density neighbourhoods. In Vancouver, for example, 53% of the people who were living 20 kilometres or more from the city centre were in low-density neighbourhoods. In Toronto and Montréal, the proportions were 72% and 71%, respectively.[21]

The population of low-density peripheral neighbourhoods is different from the population of high-density central neighbourhoods

Geographers and sociologists who study cities have long known that people with similar characteristics tend to gather in the same types of neighbourhoods within the urban space. This is reflected in census data in a number of ways (see Tables A.3 to A.8).

Walking around the central neighbourhoods of large cities, one might get the impression that most residents are couples without children. That impression would not be wrong. For example, in Montréal in 2001, only 38% of households in high-density central neighbourhoods had a child aged 18 or under. The corresponding proportion was 58% in low-density peripheral neighbourhoods at least 20 kilometres from the city centre.

This negative correlation between the presence of young families and the proximity of the city centre is even clearer in Table A.4. The table shows that in Toronto, Montréal and Vancouver, the proportion of children aged 14 and under in neighbourhoods close to the city centre was only about half that in the most peripheral neighbourhoods.

On the other hand, the proportion of seniors is higher in high-density neighbourhoods close to the city centre. For example, in Montréal, which has a higher percentage of renters than any other large metropolitan area in Canada, the proportion of seniors in high-density neighbourhoods was double that in low-density neighbourhoods (16% compared with 8% in 2001). Some elderly people, because of their more limited mobility, may have to live in apartments where some services are more readily accessible. In addition, specialized hospitals tend to be located in the most central neighbourhoods of large cities.

University graduates live more in the city centre

In most CMAs, the proportion of people with a university degree is slightly higher in high-density central neighbourhoods. The farther a neighbourhood is from the centre, the lower the proportion of university graduates. These differences between peripheral and central neighbourhoods are attributable in part to the fact that the most highly skilled, highly paid jobs are concentrated in the centres of large cities.[22]

Recent immigrants are more likely to live in high-density neighbourhoods

Recent immigrants, defined here as people who arrived in Canada 10 years or less before the census date, are heavily concentrated in medium-density and high-density neighbourhoods. For example, in the CMA of Toronto in 2001, 28% of residents in high-density neighbourhoods were recent immigrants, compared with only 11% in low-density neighbourhoods. This is no surprise since many studies have shown that recent immigrants tend to settle in neighbourhoods where socio-economic status and housing costs are lower.[23]

According to the composite indicator, the overrepresentation of recent immigrants in medium- and high-density neighbourhoods is the same no matter how far the neighbourhood is from the city centre. In other words, whether they live in the centre or on the periphery of a CMA, recent immigrants have a greater tendency to live in higher-density neighbourhoods than more established immigrants or non-immigrants.

It is worth noting that in Toronto and Vancouver, distance from the city centre has no appreciable effect on the proportion of recent immigrants, except in neighbourhoods that are 25 kilometres or more from the city centre; these more distant neighbourhoods have a lower percentage of recent immigrants. In contrast, the proportion of recent immigrants declines in neighbourhoods that are farther from the city centre in Montréal, Ottawa-Gatineau, Calgary and Edmonton.

New dwellings are concentrated in low-density peripheral neighbourhoods

Data from the 2001 Census suggest that the majority of dwellings built in the 1990s were constructed in peripheral neighbourhoods with low population density (Table A.8). This fact is probably not a surprise since such neighbourhoods have more land available that is suitable for residential developments, which means lower costs. It is nonetheless interesting to note that 60% of all new dwellings built between 1991 and 2001 were constructed in low-density neighbourhoods; the proportion was as high as 88% in the CMA of Calgary. Clearly, urban development in large metropolitan areas continues to follow a pattern of low density and distance from the city centre.

Of course, the tables and maps do not provide a complete picture of the different characteristics of the populations in the various types of CMA neighbourhoods. The main purpose of this discussion was to show that all of the large CMAs exhibit similar patterns of population distribution between neighbourhoods

that are more typically urban (central, high-density) and neighbourhoods that are more typically suburban (peripheral, low-density). The value of differentiating CMA neighbourhoods on the basis of the criteria developed in this article will become much clearer when we address the various topics in the series. More generally, the use of these classifications will provide a more accurate picture of the extent to which the quality of life of Canadians varies with the types of neighbourhoods in which they live.

Summary and conclusion

In the series of articles on life in metropolitan areas, we will rely on the well-known geographic concepts of census metropolitan area and census tract as well as three major distinctions: central

CST Other possible approaches to classifying neighbourhoods and CMA zones as urban or suburban

In this article, we cannot discuss every imaginable approach to differentiating between suburban neighbourhoods and more urban neighbourhoods. In some cases, we do not have data for all Canadian census metropolitan areas (CMAs). That is why we have discarded approaches that, although interesting from a theoretical standpoint, would be difficult or even impossible to implement at the present time. For example, we could devise a method of differentiating between neighbourhoods on the basis of the diversity of land use, that is, the degree to which residences, stores and places of work coexist in a neighbourhood, instead of the sharp separation of land uses based on predefined neighbourhoods that is typical of traditional suburbs subject to strict zoning regulations.[1] The problem with this approach is that for the moment at least, we have no source of uniform data that might provide information about the diversity of land use for all neighbourhoods in all CMAs.

Other ways proposed by experts for distinguishing between urban and suburban include road configuration (a grid structure typical of urban neighbourhoods, or curving streets with dead-ends), proximity to or distance from daily shopping outlets (grocery stores, etc.), access to public transportation, and even residents' perceptions of their own neighbourhood as urban or suburban.[2] Data that could be used to measure these factors in every census tract in Canadian CMAs simply do not exist.

Finally, one more approach is worth mentioning. It has been set aside (at least for now) not because there are no data but because substantial research would have to be done before it could be implemented. In this method, whose main ideas were formulated by an American geographer,[3] the historical urban centre of a CMA (the traditional urban neighbourhoods) consists of the urban core before the period of intensive suburbanization of urban populations began in about 1945. Suburbs are the zones that have been added to that original urban core in the last 50 years. Depending on one's objectives, one could identify the initial suburbs as areas added to the urban core between 1951 and 1981, and the new suburbs as areas added to the urban core since 1981.

There is a chance that this methodology will be developed and used in this series on metropolitan areas. For the moment, all we can do is point out that it exists. It is also worth noting that the method would be valid only for CMAs that existed 50 years ago and for which we know the boundaries of the urban core in 1951. Generally speaking, these would be the largest CMAs.

Other features that can be used to differentiate neighbourhoods

In articles later in the series, we will be focusing on other characteristics of neighbourhood populations. The main point behind presenting data from different perspectives is to enhance and complement the information available for CMAs as a whole. For some subjects, it may be that distance to the city centre is simply not a relevant indicator and that the analysis will only consider neighbourhoods' socio-economic or historical characteristics.

1. According to numerous studies and authors, the level of mixed usage in neighbourhoods could have an impact on the quality of the environment, social vitality of the neighbourhood and public health. The urbanist and economist Jane Jacobs probably made the most well-known argument for the positive effect of diversity on the cohesion and vitality of urban neighbourhoods in the classic *The Death and Life of Great American Cities*. For examples of studies that address the relationship between urban diversity, quality of the environment and public health, see Frumkin, H., Frank, L. and Jackson, R. (2004). *Urban Sprawl and Public Health*. Washington: Island Press.
2. Bagley, M.N., Mokhtarian, P.L. and Kitamura, R. (2002). A methodology for the disaggregate, multidimensional measurement of residential neighbourhood type. *Urban Studies*, 39(4), 689-704.
3. Morrill, R.L. (1995). *Metropolitan and Non-metropolitan Areas: New Approaches to Geographical Definition*. Dahmann, D.C. and Fitzsimmons, J.D. (eds.). Working paper no.12. Washington, D.C.: US Bureau of the Census.

CST Urban sprawl and urban growth

The primary aim of the articles in this series is not to document the patterns of population growth or decline in large urban areas. That information is available in other Statistics Canada publications.[1] However, the idea that metropolitan areas grow and develop in different ways will inform a number of articles in the series. For that reason, it is worth exploring those concepts which, like suburb and city centre, are understood differently by different people.

Many experts and commentators, in North America at least, attribute a rather negative connotation to the concept of urban or suburban sprawl.[2] Even though there are many different points of view on the subject, urban sprawl is generally portrayed as a form of disorderly and excessive urban expansion characterized by encroachment on agricultural land, very high dependence on cars, and the development of new neighbourhoods with low population density and low land-use diversity with homes in some neighbourhoods and stores and services in others.[3]

The concept of urban sprawl will not be used much in this series, precisely because of the negative connotations associated with it. Instead, we will generally use the term *urban expansion*, a process by which the area of inhabited land within a CMA increases as its population grows or as peripheral municipalities become part of the CMA because of stronger economic and social ties with the urban core.

The concept of urban expansion is not associated with a particular form of urban development, as is often the case for the concept of urban sprawl. In some urban areas, new neighbourhoods may have a higher population density, greater diversity of land use and more extensive use of public transportation. In short, the concept of urban expansion may include both these forms of development and the forms of development that are more typical of postwar urban sprawl in North America. Urban expansion generally goes hand in hand with urban population growth.

1. Statistics Canada. (2007). *Portrait of the Canadian Population*. Catalogue no. 97-550-XIE. Ottawa: Minister of Industry.
2. See, for example, Bruegmann, R. (2005). *Sprawl – A compact history*. Chicago: The University of Chicago Press. Also Brueckner, Jan K. (2000). Urban sprawl: Diagnosis and remedies. *International Regional Science Review*, 23(2), 160-171.
3. Duany A., Plater-Zyberk, E. and Speck, J. (2000). *Suburban Nation – The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press; Brueckner. (2000).

and peripheral neighbourhoods, high-density and low-density neighbourhoods, and central and suburban municipalities.

We will define the most central neighbourhoods as those which are close to the census tract where the city hall of the central municipality is located, and the most peripheral neighbourhoods as those which are farthest from that central location.

High-density neighbourhoods will be neighbourhoods composed of a high proportion of apartment buildings or row houses. Low-density neighbourhoods will be neighbourhoods in which most of the dwellings are single houses, semi-detached houses or mobile homes. These are the most common types of housing in postwar suburbs.

The central municipality is the municipality that lends its name to the CMA, and all other municipalities in the CMA are suburban municipalities.

Much has been said of the fundamental differences between urban and suburban neighbourhoods or central and peripheral neighbourhoods: different quality of life, clearly distinct socio-demographic and economic profiles, differing values, and so on. Yet we seldom have solid data that could be used to determine whether these putative differences are myth or reality. And when such data are available, we sometimes have trouble distinguishing clearly between urban and suburban areas because we lack clear definitions or concepts for delineating them.

A key objective of this series is to remedy these two deficiencies, first by using Statistics Canada's different data sources to test different hypotheses, and second by relying on the classifications presented in this article. Notwithstanding the form and content of this article, the ultimate aim of this series is not methodological. Rather, it is to shed new light on the quality of life of the ever-growing numbers of Canadians who live in the various neighbourhoods of large urban areas.

Martin Turcotte is a social sciences researcher with Social and Aboriginal Statistics Division, Statistics Canada.

1. These localities have many different names: village, town, municipality, city, municipal district, Indian reserve, parish, etc. We sometimes refer to these geographic entities as census subdivisions.
2. Encyclopedia of Human Geography.

3. Parr, John B. (2007). Spatial definitions of the city: four perspectives. *Urban Studies*, 44(2), 381-392.

4. Ley, D. and Frost, H. (2006). The inner city. *Canadian cities in transition* (3rd ed.) (pp. 192-210). Don Mills: Oxford University Press; Broadway, M.J. and Jesty, G. (1998). Are Canadian inner cities becoming more dissimilar? An analysis of urban deprivation indicators. *Urban Studies*, 35(9), 1423-1438.

5. Polèse, M. (1994). *Économie urbaine et régionale – Logique spatiale des mutations économiques*. Paris: Economica.

6. Ley and Frost (2006).

7. Shearmur, R. and Coffey, W.J. (2002). A tale of four cities: intrametropolitan employment distribution in Toronto, Montreal, Vancouver and Ottawa-Hull, 1981-1996. *Environment and Planning A,* 34, 575-598.

8. Charney, I. (2005). Property developers and the robust downtown: the case of four major Canadian downtowns. *The Canadian Geographer/Le Géographe canadien*, 49(3), 301-312.

9. The Charter of Montreal is available on the Government of Quebec publications website at http://www.publicationsduquebec.gouv.qc.ca/accueil.fr.html.

10. See, for example, Bunting, Walks and Filion. (2004). The uneven geography of housing affordability stress in Canadian metropolitan areas. *Housing Studies*, 19(3), 361-393. They consider a neighbourhood to belong to the urban core if it contains 1.5 times more housing built in 1946 or earlier, as compared to the proportion of total housing in the CMA. See also Walks, R.A. (2005). The city-suburban cleavage in Canadian federal politics. *Canadian Journal of Political Science*, 38(2), 383-413. This author defines urban core neighbourhoods as contiguous neighbourhoods in areas where the majority of housing was constructed before 1946.

11. This is especially true for certain neighbourhoods where the decision to classify them as part of the urban core or as suburbs would have to be made on a case-by-case basis; for example, neighbourhoods that are very centrally located but where the housing is of recent construction, meaning that they cannot formally be considered « old » neighbourhoods.

12. Heisz, A. and Larochelle-Côté, S. (2005). *Work and Commuting in Census Metropolitan Areas, 1996 to 2001*. Statistics Canada Catalogue no. 89-613-MWE. Ottawa: Minister of Industry. For an example of another study using a similar approach based on distance to the city centre, see Boehm, T. and Ihlanfeldt, K. (1991). The revelation of neighborhood preferences: an *n*-chotomous multivariate probit approach. *Journal of Housing Economics*, 1, 33-59.

13. Note that we also could have used the census tract with the most jobs in the central employment cluster to identify the central location of the city centre (based on the method used by Shearmur and Coffey; see note 7). However, this method would have produced very similar results since the census tract containing the most employment in the city centre is generally very close to the census tract where the city hall for the central municipality is located; in Montreal and Calgary, for example, the CT containing the city hall is adjacent to the CTs containing the highest concentration of employment. In certain cases, the CT of the city hall and the CT of highest employment are one and the same (the CMAs of Ottawa, Hamilton, Halifax and Victoria, for example).

14. See, for example, Smith, P. J. (2006). Suburbs. *Canadian Cities in Transition (3rd)*(pp. 211-233). Don Mills: Oxford University Press; Ray, B.K., Halseth, G. and Johnson, B. (1997). The changing 'face' of the suburbs: issues of ethnicity and residential change in suburban Vancouver. *International Journal of Urban and Regional Research*, 21(3), 75-99.

15. Gordon, D. and Vipond, S. (2005). Gross density and new urbanism. *Journal of the American Planning Association*, 71(1), 41-54.

16. Harris, R. (2004). *Creeping Conformity – How Canada became suburban*. Toronto: Toronto University Press.

17. It is important to note that mobile homes account for only a small minority of the housing stock. In 2001, only about 1% of all Canadians were living in a mobile home.

18. For example, even though only 38% of households in the city of Ottawa live in a single family home, single family dwellings occupy 70% of residential land in the urban area. In contrast, apartment buildings occupy only 7% of residential land but house 35% of households. In other words, "apartment buildings provide accommodation for almost as many households as single family dwellings, but they occupy ten times less land." Source : City of Ottawa, http://www.ottawa.ca/city_services/statistics/counts/land_use/index_fr.html, (Accessed August 15, 2007.)

19. Researchers interested in the criteria that determine whether a locality constitutes a suburb or not have often considered that one of the most important factors was the low density of development, typically indicated by single family homes or detached houses. See, for example, Harris (2004).

20. This approach addresses some of the concerns of researchers who think that using a single criterion (density, diversity or distance) to differentiate traditional from suburban neighbourhoods is limiting and perhaps misleading because a neighbourhood could appear to be urban along one dimension but more suburban along another. For more details, see Bagley, M.N., Mokhtarian, P.L. and Kitamura, R. (2002). A methodology for the disaggregate, multidimensional measurement of residential neighbourhood type. *Urban Studies*, 39(4), 689-704.

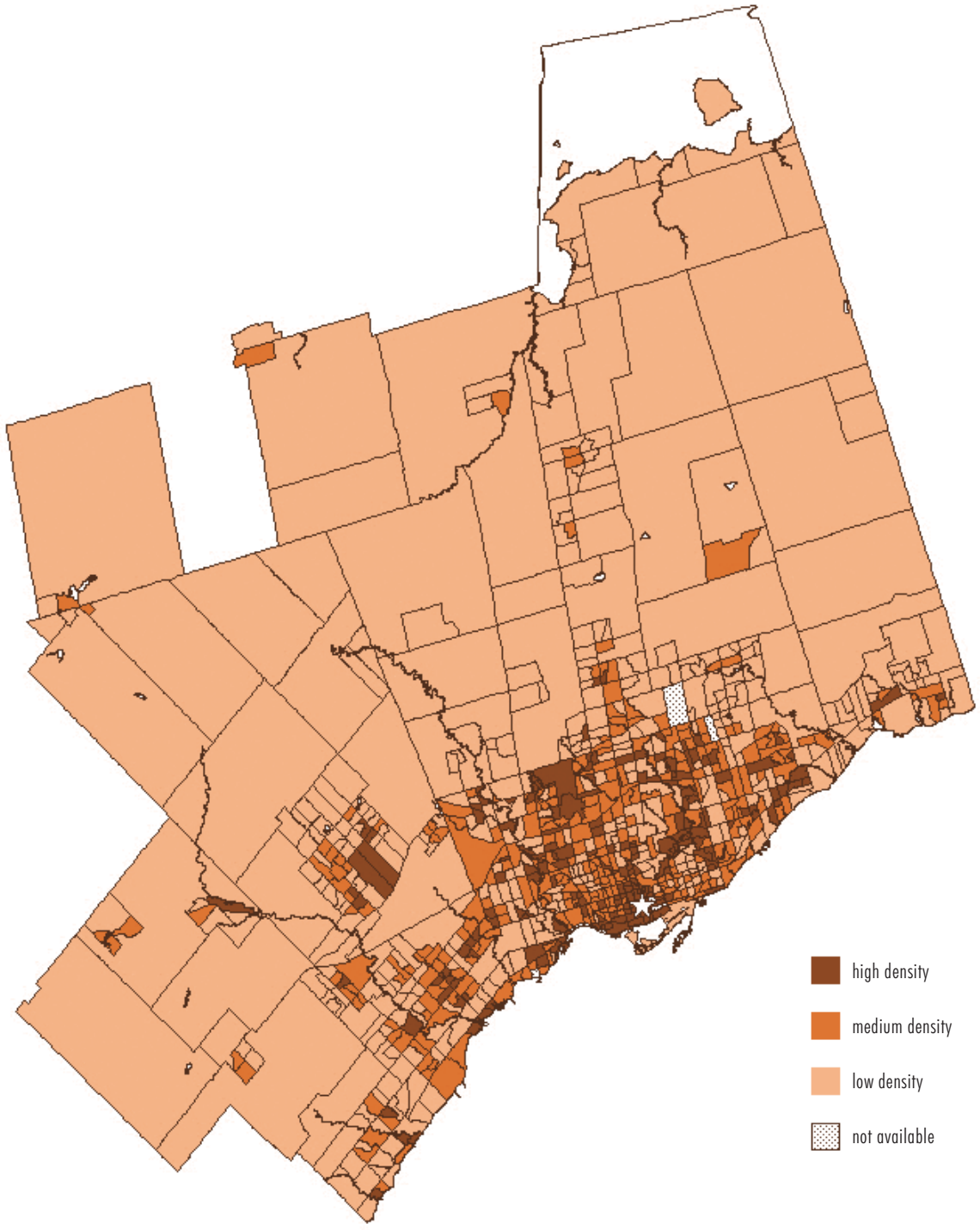
21. It is important to note that the category of high-density neighbourhoods may include neighbourhoods where the density of the population per square kilometre varies considerably depending on the CMA. In the large CMAs like Toronto, Montreal and Vancouver, some high-density neighbourhoods are composed of high-rise apartment buildings (mainly downtown). In these cases, the level of population density per square kilometre may not be comparable to those observed elsewhere. In contrast, in the smaller CMAs, high-density neighbourhoods consist mainly of low-rise apartment buildings. Consequently, caution must be exercised when comparing the population of high-density neighbourhoods in the different CMAs.

22. Heisz and Larochelle-Côté (2005).

23. Massey, D. S. and Denton, N.A. (1985). Spatial assimilation as a socioeconomic outcome. *American Sociological Review*, 50, 94-106.

CST

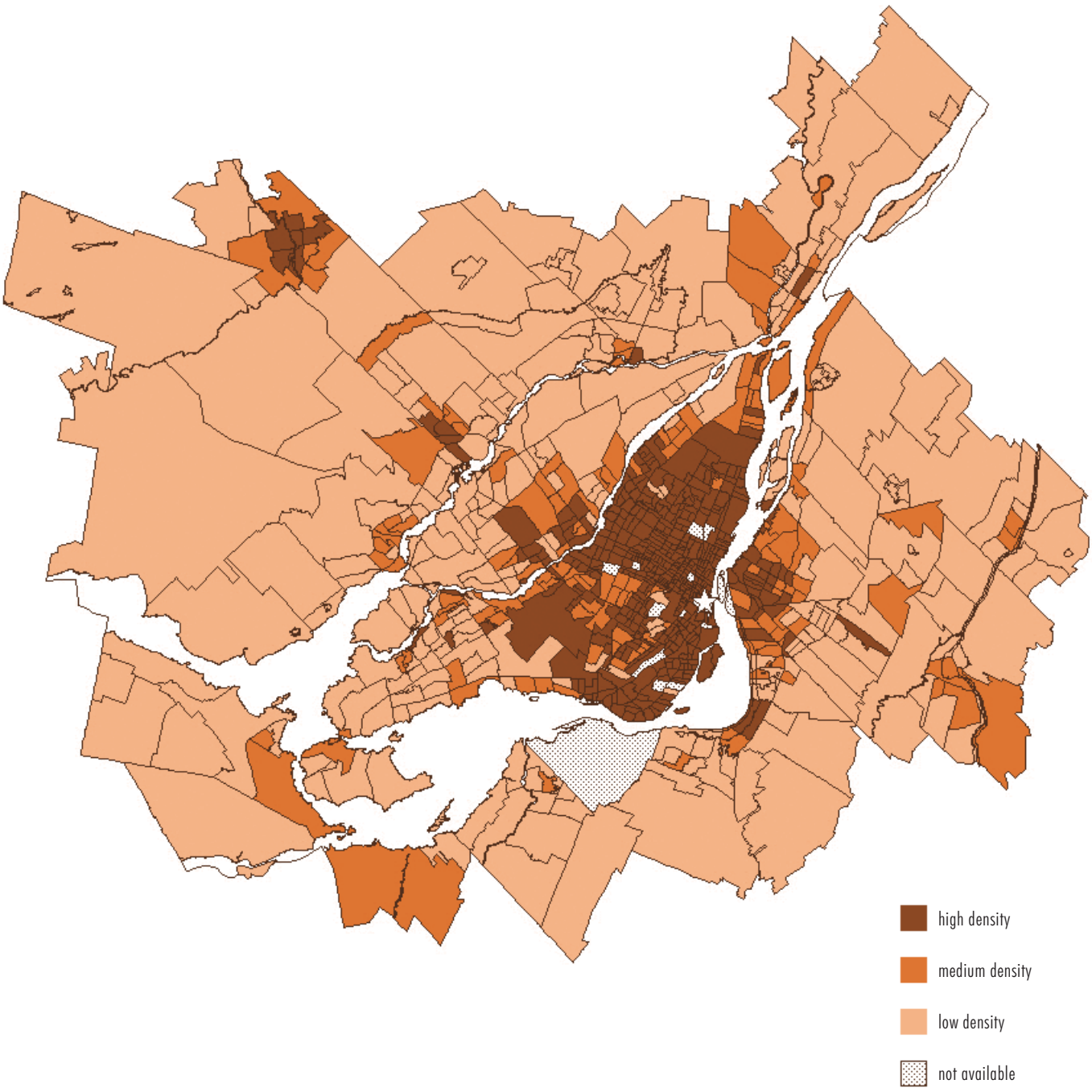
Map 1 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Toronto



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

CST

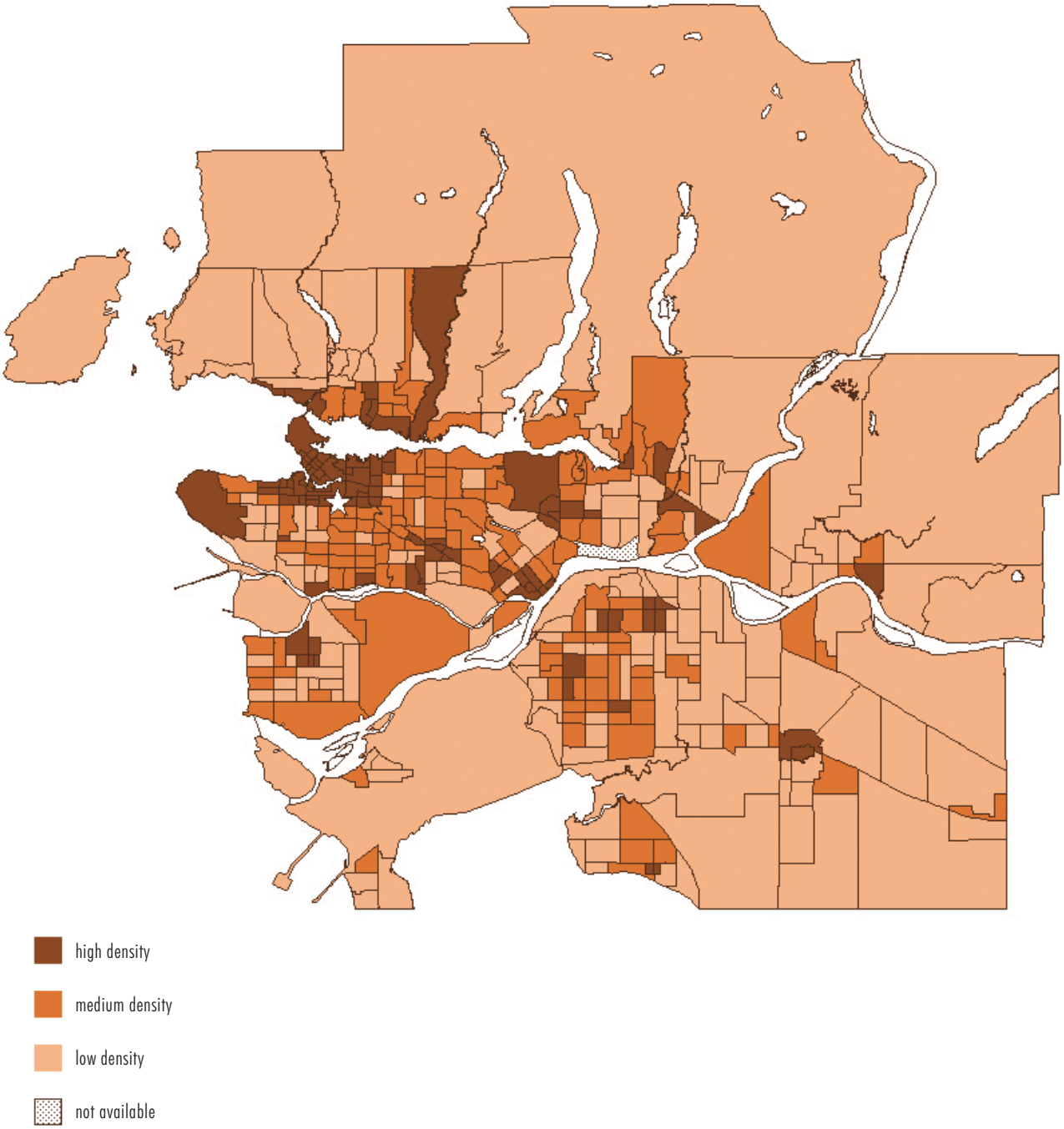
Map 2 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Montreal



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

CST

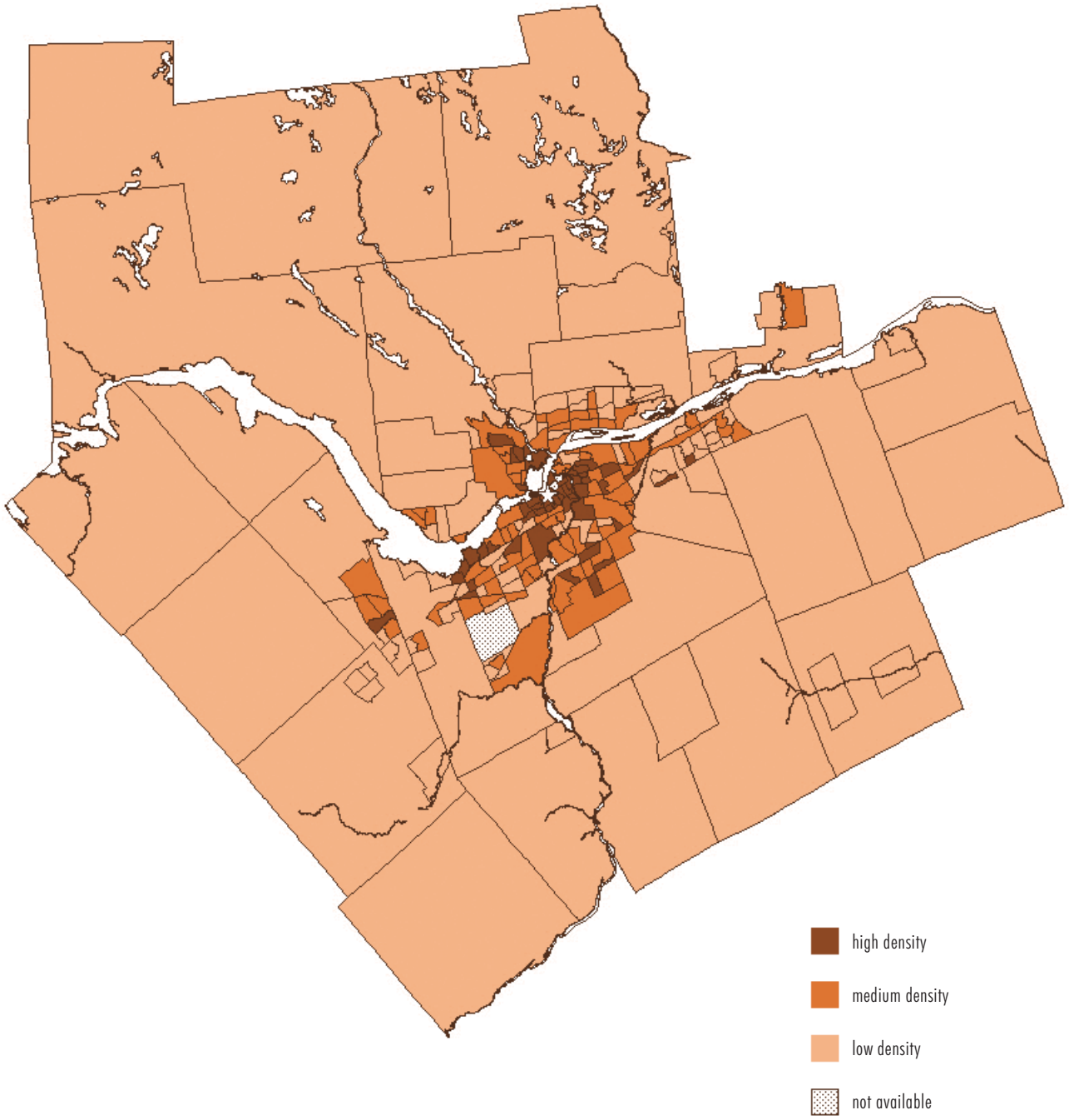
Map 3 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Vancouver



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

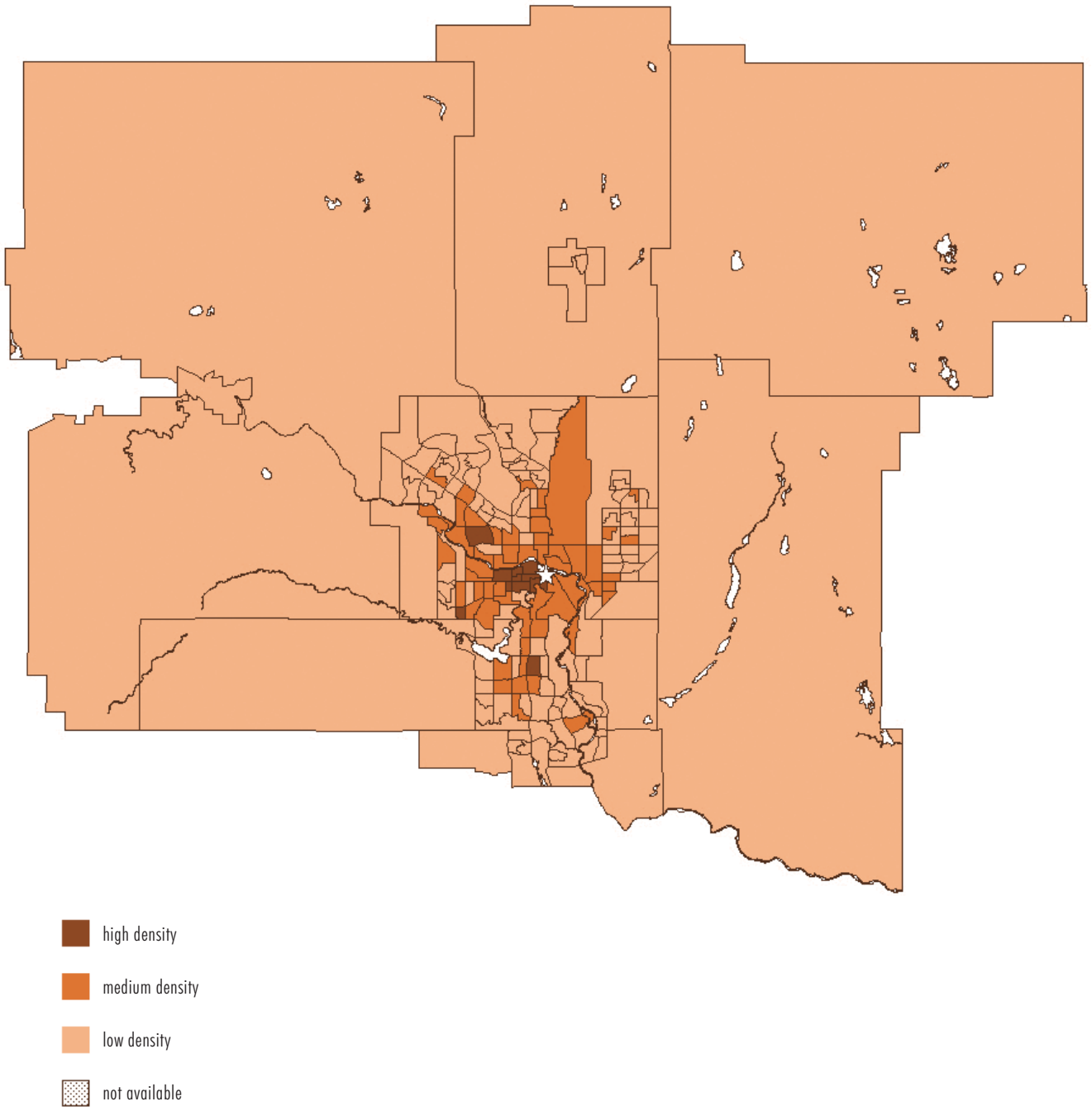
CST

Map 4 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Ottawa



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

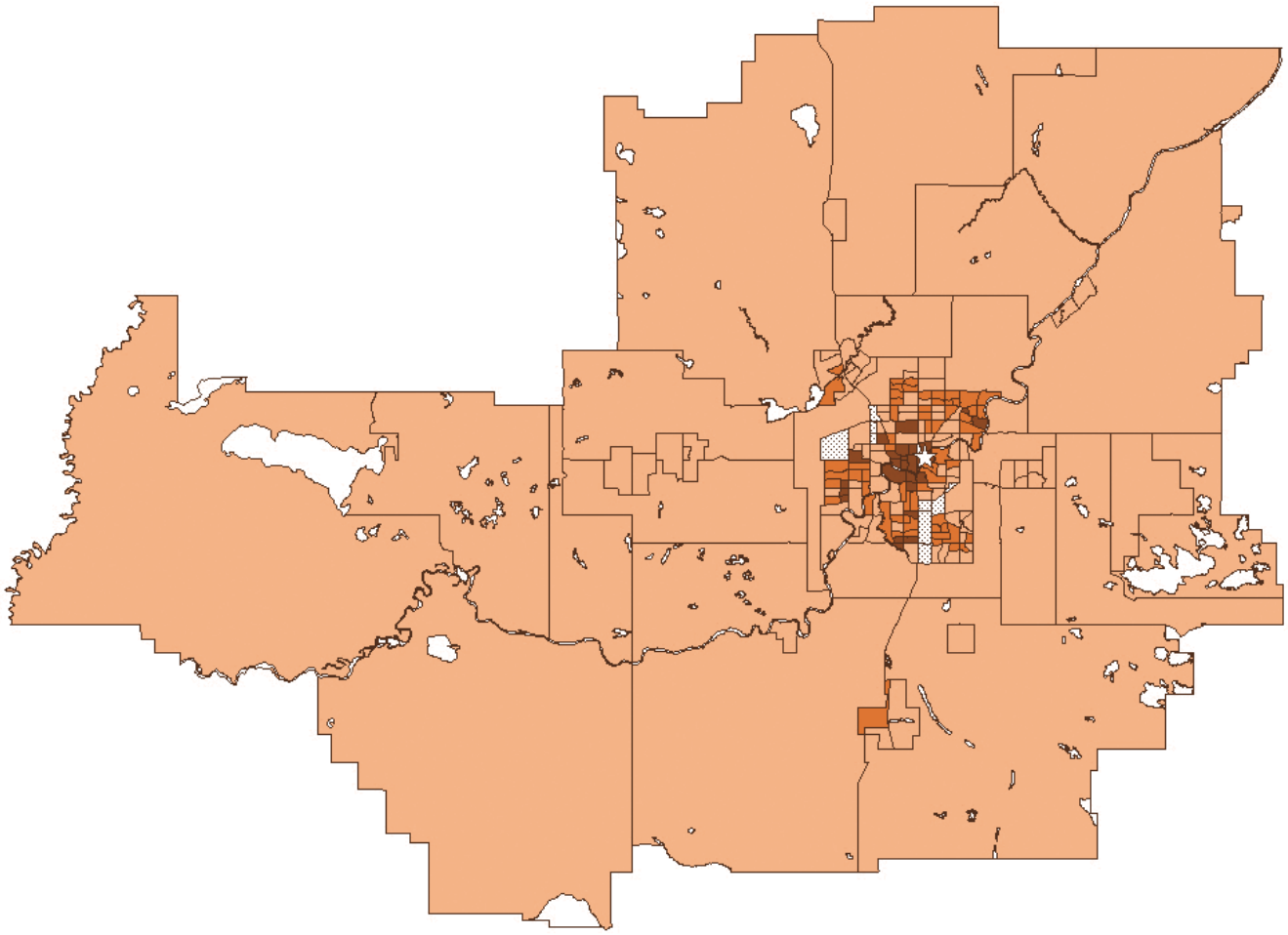
CST Map 5 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Calgary



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

CST

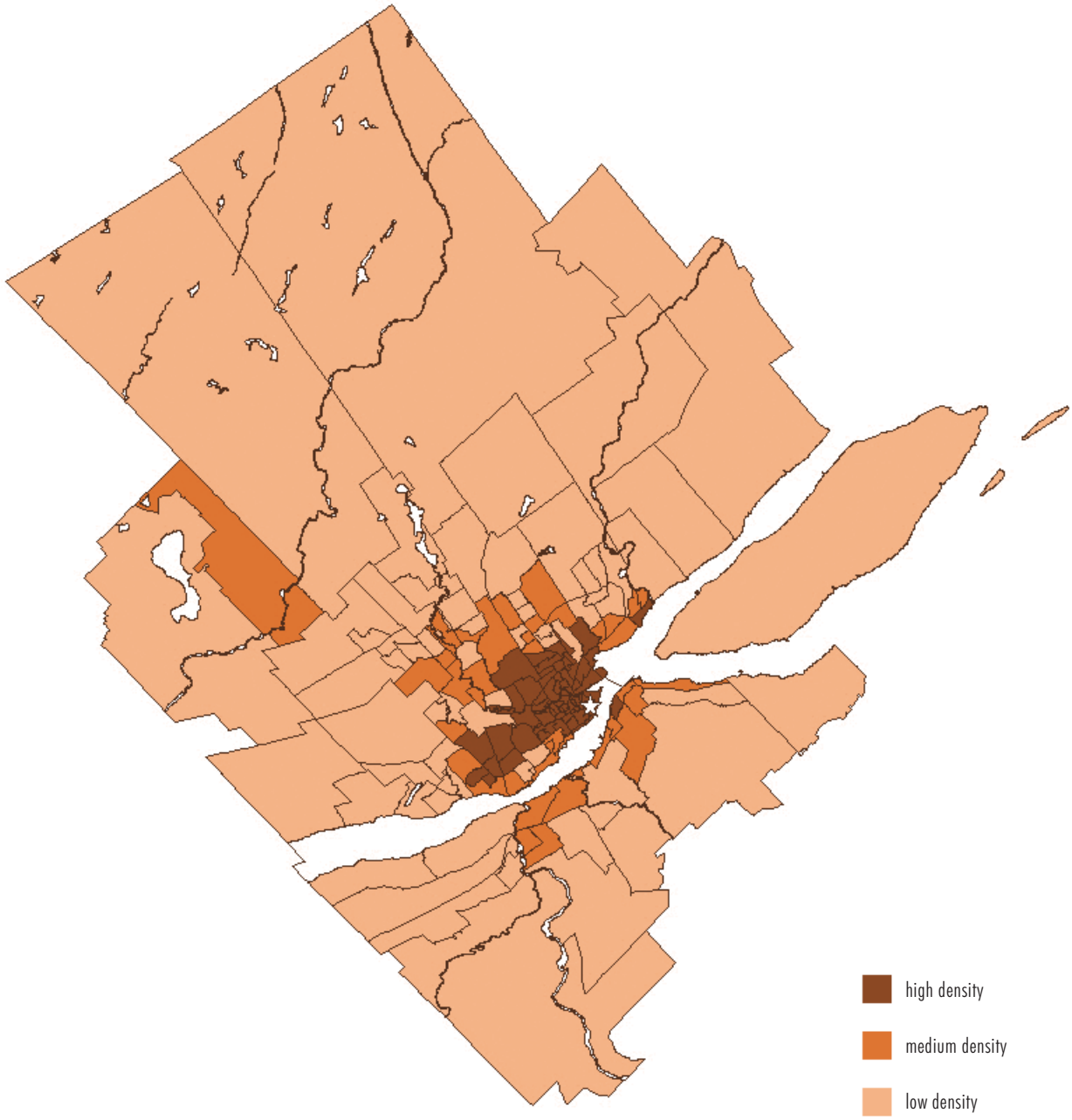
Map 6 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Edmonton



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

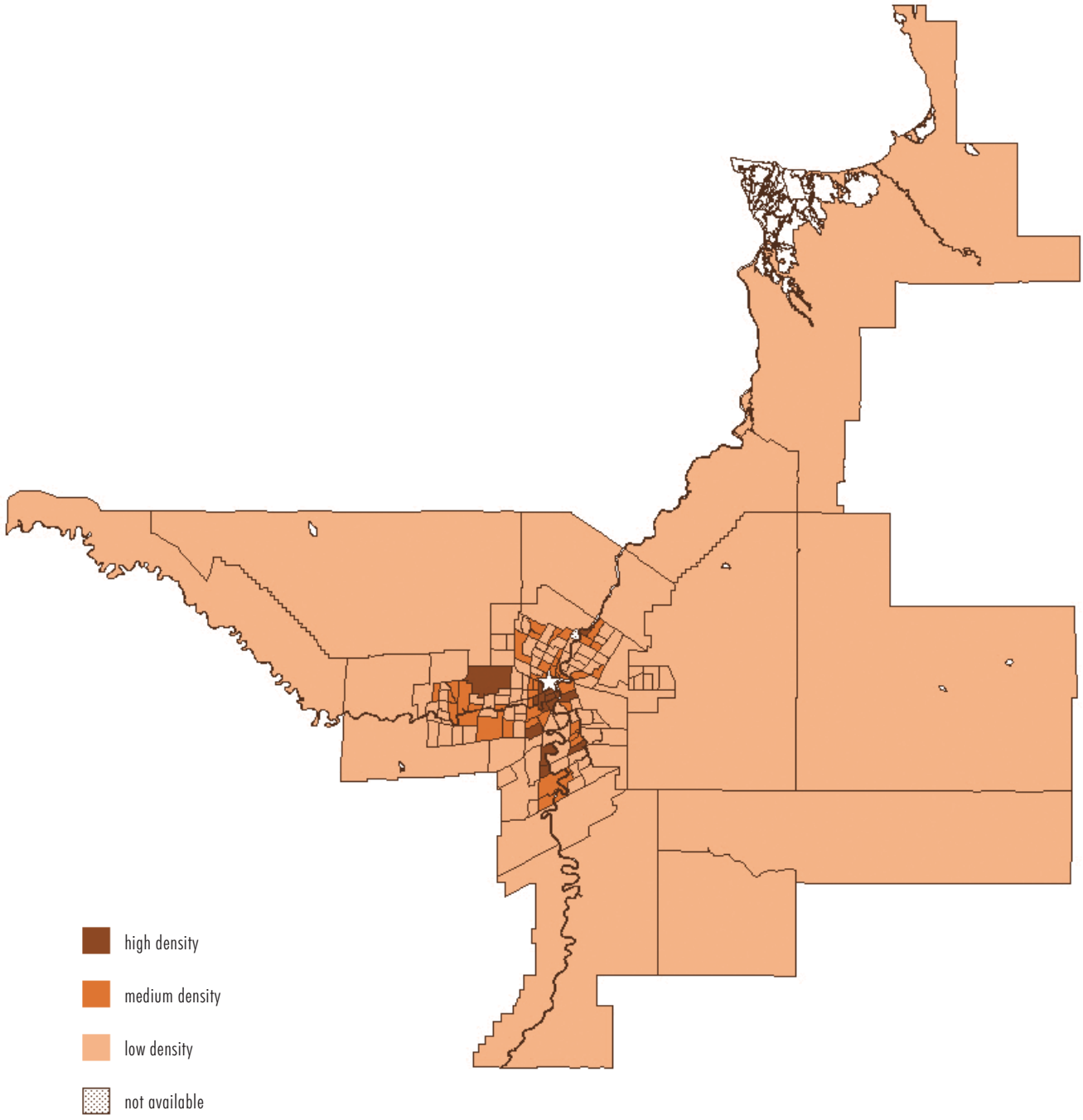
CST

Map 7 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Quebec



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

Map 8 Percentage of single family, semi-detached or mobile homes by census tract (CT), 2001 — CMA of Winnipeg



Source: Statistics Canada, 2001 Census.
Star: locates the census tract that includes the city hall of the central municipality.

Life in metropolitan areas

Dependence on cars in urban neighbourhoods

by Martin Turcotte

To get around easily in today's big cities, especially in their sparsely populated suburbs, access to a private motor vehicle is not only very convenient but sometimes absolutely essential. Parents with young children know this only too well, since they often have to commute to work and back, drive the children to the daycare centre or evening activities, go to an appointment, shop for dinner and do other things besides – all in the same day.

While many Canadians simply could not do without their cars, the automobile is associated with numerous problems, as we are all aware. In Canada and other Western countries, road transportation is a big contributor to greenhouse gas (GHG) emissions.[1] A significant proportion of the increase in GHG emissions in recent years can be attributed to the growing popularity of pickup trucks and sport utility vehicles.[2]

Besides adding to GHG emissions, driving our cars every day is responsible for much of the pollution that generates smog.[3] In addition, the widespread use of automobiles by workers commuting to work instead of using public transit is a major factor in the traffic congestion that affects most metropolitan areas in North America[4] and leads to high costs for building and repairing roads.

In these circumstances, it is hardly surprising that many people are calling for an end to the excessive use of cars and for greater reliance on more environment-friendly means of transportation, such as car-pooling, public transit, walking and bicycling.

As much as they want to do something, many people probably feel helpless when confronted with such suggestions. One of the underlying reasons for these feelings may lie in the fact that the types of neighbourhoods and municipalities in which people live simply do not lend themselves to modes of travel other than the automobile – in part because businesses, places of work and residences are located in different areas.

In this article, we focus on the relationship between the types of neighbourhoods in which people live and the use of cars for daily travel. How much do residents of peripheral areas and low-density neighbourhoods depend on cars in their daily lives compared with residents of more "urban" neighbourhoods? To what extent can residents of central neighbourhoods go about their day-to-day business without using a car? In which metropolitan areas is exclusive use of the automobile most common?

At the same time, we are interested in identifying the characteristics of people who use cars. For example, are people who live alone less inclined to drive and more likely to walk than couples with children?

To answer these questions, we will use data from the 2005 General Social Survey (GSS) on time use to examine motor vehicle use by Canadians aged 18 and over who made at least one trip commuting and/or running errands on the survey reference day. Data from the 2001 Census were also used to differentiate the more central neighbourhoods of census metropolitan areas (CMAs) from the more peripheral ones, and low-density

CST What you should know about this study

This article is based on data collected by the 2005 General Social Survey (GSS). The GSS is an annual survey that monitors changes and emerging trends in Canadian society. For the fourth time in Canada, the GSS has collected national level time use data. In addition to the time use diary, the 2005 questionnaire covers perceptions of the time crunch, social networks, transportation, and cultural and sports activities.

The time use estimates in this report are based on data from the time use diary portion of the (GSS). The diary provides a detailed record of the time spent on all activities in which respondents participated on the designated day. In addition, information was collected on where the activities took place (e.g., in a car as the driver, on public transit) and who the respondent was with (e.g., spouse, children, family, friends).

This study includes all trips made by people aged 18 and over on the reference day. Since age restrictions on automobile use may vary from province to province, people aged 15 to 17 were excluded from the study population.

Only people who made at least one trip regardless of mode of transportation on reference day were selected for the study. A few respondents reported total travel time of more than 720 minutes (12 hours); because these extreme cases could have had an excessive impact on the estimates, they were also excluded from the analysis.

In 2005, 85% of Canadians aged 18 and over made at least one trip on their designated day. The proportion was roughly the same in low-density neighbourhoods as in high-density neighbourhoods and as high in central neighbourhoods as in peripheral neighbourhoods. Therefore, the differences in automobile dependence between types of neighbourhoods cannot be attributed to the fact that residents of certain types of neighbourhoods were more or less likely to have made at least one trip during their day.

According to 2005 GSS data, the factor that was most strongly associated with the probability of having made a trip on that day was age: 72% of people aged 65 to 74 and 61% of people aged 75 and over made at least one trip, compared with 91% of people aged 18 to 24.

Delimiting the city centre, the periphery and low- and high-density neighbourhoods

In this study, the city centre is the census tract that contains the city hall of the central municipality; hence, the distance from the city centre is the distance between the neighbourhood of residence and the central municipality's city hall. Central neighbourhoods are neighbourhoods that are less than 5 kilometres from census tract (CT) containing the city centre. Other neighbourhoods are referred to as peripheral neighbourhoods, and are differentiated by their distance from the city centre; for example, neighbourhoods that are between 5 and 9 kilometres from the city centre are regarded as part of the near periphery.

The density level of neighbourhoods is based on the type of dwellings they contain. We established three main categories of neighbourhoods:

Low-density neighbourhoods, which contain single, semi-detached and mobile homes and dwellings. Such dwellings are considered to be traditional suburban dwellings. Specifically, low-density neighbourhoods are neighbourhoods in which at least 66.6% of the dwellings are traditional suburban dwellings.

High-density neighbourhoods, which are essentially composed of apartment and condominium buildings (whether high-rise or low-rise) and row houses. Such dwellings are characteristic of traditional urban neighbourhoods. High-density neighbourhoods are neighbourhoods in which less than 33.3% of the dwellings are traditional suburban dwellings.

Medium-density neighbourhoods are characterized by mid-level concentrations of 33.3% to 66.6% traditional suburban dwellings.

For more details on how these criteria were defined, see "The city/suburb contrast: How can we measure it?" in *Canadian Social Trends*, 85.

Definitions

CMA: Census Metropolitan Area. A CMA is an area consisting of one or more adjacent municipalities situated around a major urban core. A CMA must have a population of at least 100,000, and the urban core must have a population of at least 50,000.

Eight largest CMAs: This category includes Toronto, Montréal, Vancouver, Ottawa-Gatineau, Calgary, Edmonton, Quebec and Winnipeg.

Medium CMAs: This category includes Hamilton, London, Kitchener, St. Catharines - Niagara, Halifax, Victoria, Windsor and Oshawa.

CST What you should know about this study – continued

Smaller CMAs: This category includes Saskatoon, Regina, St. John's, Greater Sudbury, Chicoutimi - Jonquière, Sherbrooke, Abbotsford, Kingston, Trois-Rivières, Saint John and Thunder Bay.

Predicted probability model

To calculate the predicted probabilities, we kept constant a number of characteristics to simulate a "typical" reference person. In the context of this analysis, this reference person is a man aged 35 to 44 years old, born in Canada, who has a job and holds a college diploma, has a household income of $60,000 to $99,999 but has no children living in the household, and he lives in the CMA of Toronto. We then ask the following question: if a person having all these characteristics moved from a high-density neighbourhood to a low- or medium-density neighbourhood, how would it change the probability that he would use a car to make all his daily trips?

Please note

The differences between the central municipalities and other constituent municipalities of CMAs are presented for information purposes only. The 2005 General Social Survey used the CMA and municipality boundaries for 2001. Consequently, any boundary changes made between 2001 and 2005 (especially in Quebec) are not reflected in the municipal data.

from high-density neighbourhoods (for more information, see "What you should know about this study").

Going by car is even more common now

Even though there is a growing tendency for the population to congregate in large urban centres and people have access to better public transportation services, dependence on the automobile increased between 1992 and 2005. According to data from the General Social Survey (GSS) on time use, the proportion of people aged 18 and over who went everywhere by car – as either a driver or a passenger – rose from 68% in 1992, to 70% in 1998 and then 74% in 2005.

Conversely, the proportion of Canadians who made at least one trip under their own power by bicycle or on foot appears to have declined between 1998 and 2005. In 2005, 19% of people 18 and over walked or pedalled from one place to another, down from 26% and 25% in 1992 and 1998 respectively. How can we explain why Canadians, most of whom live in large metropolitan regions, now need their cars more than ever to go about their daily business?

Distance from the city centre results in greater use of cars

Part of the explanation lies in the fact that many residents of metropolitan regions live a significant distance from the city centre. There are very clear links between living in a peripheral neighbourhood and depending on the automobile as the primary mode of transportation for day-to-day travel. The farther people live from the city centre, the more time they spend behind the wheel (Table 1).

For Canadians aged 18 and over who made at least one trip on the survey reference day, those who lived 25 kilometres from the centre of a census metropolitan area (CMA) spent an average of one hour and 23 minutes per day in the car. In comparison, those who lived within 5 kilometres of the centre of their CMA spent an average of just 55 minutes travelling by car, whether as the driver or a passenger.

In view of these differences, it is not surprising to find that the greater the distance from the centre, the higher the proportion of people who used a car for at least one of their trips. Specifically, 61% of people living in a central neighbourhood got behind the wheel, compared with 73% of people living between 10 and 14 kilometres from the city centre and 81% of people living 25 kilometres or more from the centre.

In census agglomerations (CAs are smaller urban areas) and in rural areas and small towns, people behaved in much the same way as residents of neighbourhoods farthest from the CMA city centre. However, average travel times as a driver were lower for residents of small towns and rural areas that were farthest from the CA city centre.[5]

Neighbourhood density is important

Even more revealing relationships emerge if we ignore distance and instead categorize people according to the density of the neighbourhood in which they live. For example, over 80% of residents comprising exclusively or almost exclusively suburban-type housing of very neighbourhoods made at least one trip by car (as the driver) during the day. By comparison, less than half of people living in very high-density neighbourhoods did so.

In addition, travelling exclusively by driving was far more common in low-density neighbourhoods. Only about one-third of residents in very high-density neighbourhoods were at

Table 1 The more suburban the neighbourhood, the more time people spent in a car on the reference day

	Population aged 18 and over making at least one trip by car			
	As a driver		As a driver or passenger	
	%	Average duration in minutes	%	Average duration in minutes
Total (Canada)	**74**	**56**	**87**	**68**
Census metropolitan areas (CMAs) †	71	55	85	68
Census agglomeration	78*	53	91*	64
Rural areas in a strong metropolitan influence zone (MIZ)	82*	66*	93*	80*
Rural areas in a moderate, weak or non-existent MIZ	77*	58	92*	74*
Distance from city centre (CMA only)				
Less than 5 km †	61	43	76	55
5 to 9 km	68*	50*	82*	62*
10 to 14 km	73*	56*	86*	69*
15 to 19 km	75*	60*	90*	74*
20 to 24 km	78*	60*	92*	71*
25 km or more	81*	70*	93*	83*
Percentage of suburban-type housing[1] in neighbourhood (CMA only)				
Less than 5 †	44	30	60	41
5 to 9	49*	34	68*	49
10 to 19	53*	39*	70*	52*
20 to 29	62*	43*	81*	57*
30 to 39	63*	52*	78*	65*
40 to 49	69*	52*	85*	64*
50 to 59	71*	50*	83*	60*
60 to 69	76*	59*	89*	71*
70 to 79	77*	57*	91*	71*
80 to 89	80*	60*	92*	73*
90 to 94	82*	68*	94*	81*
95 to 100	84*	74*	94*	87*

1. Single, semi-detached and mobile homes.
† Reference category.
* Statistically significant difference from reference category at $p<0.05$.
Note: Metropolitan area boundaries used in the 2005 General Social Survey are those established in the 2001 Census. Also see "What you should know about this study" for more information.
Source: Statistics Canada, General Social Survey, 2005.

the wheel for all of their trips during the day, compared with almost two-thirds of those who lived in very low-density neighbourhoods (Chart 1).

Difference between large and smaller CMAs

Together, Canada's eight largest metropolitan areas – the CMAs of Toronto, Montréal, Vancouver, Ottawa-Gatineau, Calgary, Edmonton, Québec City and Winnipeg– account for nearly half of the country's population (49% according to the 2006 Census). They differ from many other CMAs in the size of their population, their geographic size and their very rapid growth.

Not surprisingly, there are significant differences between these large CMAs and their smaller counterparts with regard to dependence on automobiles. For example, 81% of the residents of smaller CMAs with a population under 250,000 in 2001 went everywhere by car – as either the driver or a passenger – on the reference day, compared with 69% of residents in the eight largest CMAs.

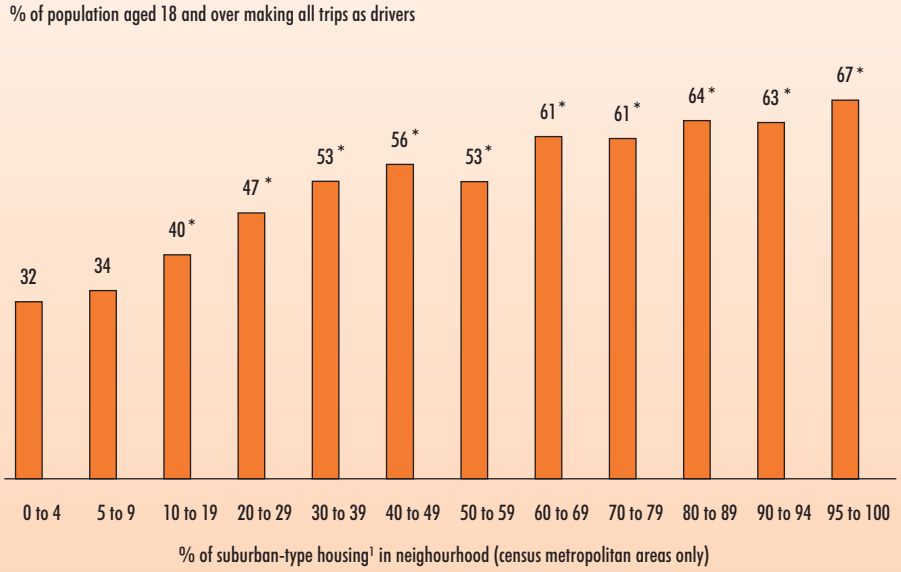
These differences between larger and smaller CMAs can be attributed to a number of factors. In CMAs such as Toronto, Montréal and Vancouver, especially in their more central neighbourhoods, public transit provides better service and is therefore used more often; parking is not as readily available for downtown workers, which discourages them from driving; and higher density makes it easier for people to walk or bicycle than to drive (higher density favours public transit, but it also tends to increase traffic congestion).[6]

Conversely, in smaller CMAs, even neighbourhoods close to the centre have characteristics that make them similar in some ways to traditional postwar suburban neighbourhoods. In 2001, for example, 45% of the dwellings in the central neighbourhoods of smaller CMAs were single-detached houses, whereas the proportions of that dwelling type were much lower in the central neighbourhoods of Toronto (13%), Montréal (4%) and Vancouver (21%). Because of the high cost and scarcity of land in the centre of most big cities, very few single-detached houses are built there.

Making all trips by car is less common in Montréal's central neighbourhoods

In 2005, of the people living in the eight largest CMAs, Calgary and Edmonton residents were the most likely to have made all their trips on the reference day exclusively by car as either the driver or a passenger (75% and 77%, respectively). In contrast, Montréal residents were least likely to have done so (65%). The difference may be due to the fact that more people live in low-density neighbourhoods in the two Alberta CMAs than in Montréal and other large urban areas. As we have seen, there is a correlation

Chart 1 About two-thirds of people living in the most suburban neighbourhoods drove their cars to make all their trips on the reference day



1. Single, semi-detached and mobile homes.
* Statistically signficant difference from 0 to 4% at $p < 0.05$.
Source: Statistics Canada, General Social Survey, 2005.

between lower population density and greater reliance on cars.[7] The fact that Montréal is an older city that was well-established before the automobile became as ubiquitous as it is today may shed some light on this difference (Table 2).

Differences in automobile use also exist between the central neighbourhoods of the eight largest CMAs. Specifically, the proportion of central neighbourhood residents who travelled everywhere by car was 29% in Montréal, compared with 43% in Toronto, 56% in Vancouver and 66% in Calgary. In the smaller CMAs, 75% of the residents of central neighbourhoods travelled exclusively by car.

Despite these regional differences, the overall patterns are very similar in CMAs of all sizes: the greater the distance from the city centre, and the greater the prevalence of traditional suburban dwellings, the higher the proportion of people who made

Table 2 Dependence on automobiles differs considerably between CMAs, but one of the most important reasons is housing density

	% of population aged 18 and over making all trips by car (as a driver or passenger) on the reference day, by census metropolitan area (CMA)									
	Toronto	Montréal	Vancouver	Ottawa–Gatineau	Calgary	Edmonton	Quebec	Winnipeg	Medium CMAs	Smaller CMAs
Total	**66**	**65**	**69**	**71**	**75**	**77**	**74**	**72**	**75**	**81**
Housing density										
High †	52	50	51	51	46[E]	58	53	60	58	66
Medium	63*	69*	74*	68*	76*	77*	78*	63	70*	77*
Low	73*	80*	77*	83*	77*	80*	82*	77*	80*	87*
Distance from city centre										
Less than 5 km †	43	29	56	48	66	64	51	65	67	75
5 to 9 km	51	54*	57	69*	72	78*	75*	73	78*	83*
10 to 15 km	61*	66*	64	76*	79	80*	76*	78*	81*	91*
15 km or more	74*	78*	83*	82*	79	82*	89*	91*	81*	92*
Administrative boundaries										
Suburban municipalities	76*	73*	75*	78*	89*	82*	78*	91*	..	..
Central municipality †	55	43	55	68	73	74	57	71	..	..

.. not available for a specific reference period
[E] use with caution
† Reference category.
* Statistically significant difference from reference category at $p < 0.05$.
Notes: Metropolitan area boundaries used in the 2005 General Social Survey are those established in the 2001 Census. See "What you should know about this study" for a list of the CMAs comprising the medium and smaller CMA categories.
Source: Statistics Canada, General Social Survey, 2005.

their trips by car as the driver or a passenger.

Characteristics of the neighbourhood, or of the people who live in it?

The correlations described above between place of residence and reliance on cars for day-to-day travel appear to be very robust. There is a possibility, however, that a portion of these differences is due to the fact that characteristics differ considerably between people who live in higher- versus lower-density neighbourhoods, or neighbourhoods that are closer to or farther from the city centre.[8]

Many characteristics, aside from place of residence, are associated with lesser or greater automobile use (Table A.1). In order to confirm the robustness of the association between the use of a car and a place of residence, we performed a statistical analysis taking account of a number of variables at the same time (in other words, the effect of age, sex, income and so on were held constant). Since we are primarily interested in the correlations between neighbourhood characteristics and automobile use for daily travel, only residents of CMAs were considered.

The results show a clear correlation between the density of the neighbourhood of residence and the probability that at least one trip during the day was made by car. For example, controlling for other factors associated with automobile use, the odds that a person drove on at least one of their trips during the day was 2.5 times higher for residents of low-density neighbourhoods than for residents of high-density neighbourhoods (Table 3, Model 1).

The conclusion was the same when we examined the other two cases: making *all* of the day's trips as a driver, and making *all* of the day's trips by car as either the driver or a passenger. That is, when we kept all other factors constant, the odds that a resident of a low-density neighbourhood made all of their trips by car was 2.8 times higher than the odds for a resident of a high-density neighbourhood.

When the influence of factors such as income, age, and so on, is removed, the distance between neighbourhood of residence and the centre of the CMA is also associated with an increase in automobile dependence. For example, if we keep all those other factors constant, the odds that someone drove their car on all trips during the day was 3.0 times higher for people who lived 25 kilometres or more from the city centre than for people who lived less than 5 kilometres from the centre (Table 3, Model 2).

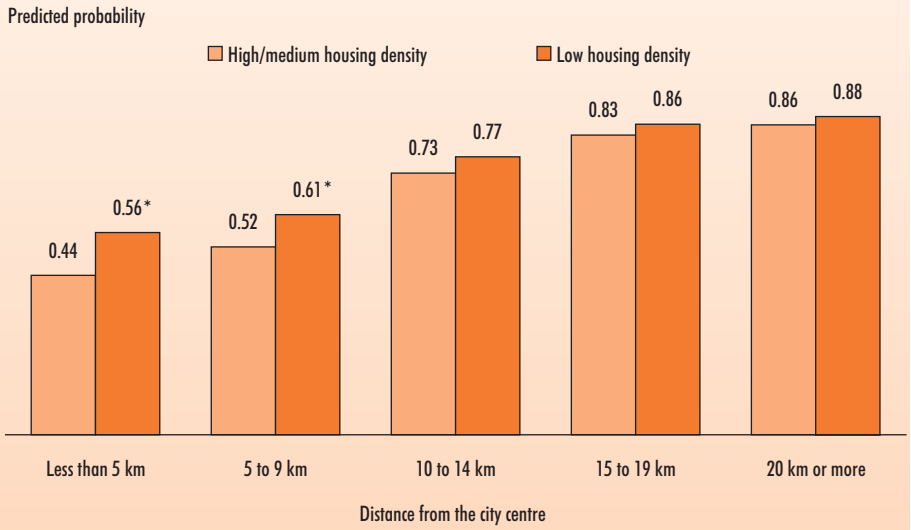
Density, distance or both?

In many cases, high-density neighbourhoods are also central neighbourhoods, and peripheral neighbourhoods are usually low-density neighbourhoods.[9] So far, our analysis has not shown whether, at an equal distance from the city centre, a higher-density neighbourhood will exhibit less dependence on cars, and vice versa for lower-density neighbourhoods. This is an important question, since land is scarce and expensive in central neighbourhoods and since most new construction takes place in peripheral neighbourhoods.

The answer is provided by a supplementary analysis (Chart 2). Keeping constant all factors associated with automobile use, we find that in central and near-peripheral neighbourhoods 5 to 9 kilometres from the city centre, living in a lower-density neighbourhood is associated with a higher predicted probability of using a car for all trips.

Above 10 kilometres from the city centre, however, the impact of neighbourhood density on automobile use dwindles until it almost vanishes.[10] If the effects of other factors are kept constant, the predicted probability that a person living in a *medium-* or *high*-density neighbourhood made all trips by car was not statistically different from

CST Chart 2 At 10 or more kilometres from the city centre, the housing density of a neighbourhood has no effect on the residents' use of cars



* Statistically significant difference from high/medium housing density at $p < 0.05$.

Note: A predicted probability of 1.0 indicates that a person had a 100% chance of having used a car to make all their trips during the reference day; a predicted probability of 0 indicates that a person had zero chance. The predicted probabilities measure the magnitude of the association between place of residence and car use, net of the effects of other variables.

Source: Statistics Canada, General Social Survey, 2005.

Table 3 Neighbourhood housing density is stongly associated with car dependence, even when other factors like income, age and presence of children are accounted for

	Model 1			Model 2		
	Number of trips as driver		All trips as driver or passenger	Number of trips as driver		All trips as driver or passenger
	At least one	All trips		At least one	All trips	
	Odds ratios					
Housing density						
High †	1.0	1.0	1.0	...	...	...
Medium	1.7*	1.8*	1.9*	...	...	...
Low	2.5*	2.2*	2.8*	...	...	...
Distance from city centre (CMA only)						
Less than 5 km †	...	...	...	1.0	1.0	1.0
5 to 9 km	...	...	...	1.5*	1.3*	1.6*
10 to 14 km	...	...	...	2.1*	1.8*	2.1*
15 to 19 km	...	...	...	2.6*	2.1*	3.2*
20 to 24 km	...	...	...	3.5*	2.5*	3.4*
25 km or more	...	...	...	3.9*	3.0*	4.4*
Sex						
Female †	1.0	1.0	1.0	1.0	1.0	1.0
Male	2.0*	2.2*	1.3*	2.1*	2.2*	1.3*
Age						
18 to 24 years †	1.0	1.0	1.0	1.0	1.0	1.0
25 to 34 years	1.8*	1.9*	1.8*	1.8*	1.8*	1.8*
35 to 44 years	2.1*	2.3*	2.2*	2.2*	2.3*	2.2*
45 to 54 years	2.6*	2.5*	2.6*	2.6*	2.5*	2.6*
55 to 64 years	2.6*	2.4*	2.5*	2.6*	2.3*	2.5*
65 to 74 years	2.6*	2.7*	3.2*	2.5*	2.6*	3.1*
75 years or more	1.5*	1.6*	1.5*	1.4*	1.6*	1.4
Immigration status						
Born in Canada †	1.0	1.0	1.0	1.0	1.0	1.0
Immigrant (before 1990)	0.9	1.1	1.0	0.9	1.1	1.1
Recent immigrants (1990 to 2005)	0.5*	0.8*	0.9	0.5*	0.7*	0.8
Presence of activity limitations						
Yes/sometimes	0.8*	0.9	0.9	0.8*	0.8*	0.9
Yes/often	0.8*	0.8*	0.8*	0.8*	0.8*	0.8*
No †	1.0	1.0	1.0	1.0	1.0	1.0
Highest level of educational attainment						
No secondary diploma †	1.0	1.0	1.0	1.0	1.0	1.0
Secondary completion	1.5*	1.3*	1.3*	1.5*	1.3*	1.3*
College or trade diploma	1.6*	1.2*	1.2	1.6*	1.2	1.1
University degree	1.5*	1.1	0.9	1.6*	1.1	1.0
Household income						
Less than $20,000 †	1.0	1.0	1.0	1.0	1.0	1.0
$20, 000 to $39,999	1.5*	1.4*	1.7*	1.5*	1.4*	1.7*
$40,000 to $59,999	2.0*	1.6*	2.0*	2.1*	1.7*	2.1*
$60,000 to $99,999	2.7*	1.6*	2.2*	2.9*	1.7*	2.4*
$100,000 and more	2.6*	1.6*	2.0*	2.7*	1.7*	2.2*
Main activity for the last 7 days						
Employed/looking for work †	1.0	1.0	1.0	1.0	1.0	1.0
Caring for children/keeping house	0.7*	0.6*	0.9	0.7*	0.6*	0.9
Retired	0.8	0.8	0.9	0.8	0.8	0.9
Student	0.6*	0.5*	0.5*	0.6*	0.5*	0.5*
Other activity	1.0	1.0*	1.0*	1.0	1.0*	1.0*

Table 3 Neighbourhood housing density is stongly associated with car dependence, even when other factors like income, age and presence of children are accounted for – continued

	Model 1			Model 2		
	Number of trips as driver		All trips as driver or passenger	Number of trips as driver		All trips as driver or passenger
	At least one	All trips		At least one	All trips	
	Odds ratios					
Presence of a child under 5						
No †	1.0	1.0	1.0	1.0	1.0	1.0
Yes	1.0	1.0	1.0	1.0	1.0	0.9
Presence of a child aged 5 to 12						
No †	1.0	1.0	1.0	1.0	1.0	1.0
Yes	1.6*	1.1	1.0	1.6*	1.1	1.0
CMA of residence (Census Metropolitan Area)[1]						
CMA of Toronto	0.5*	0.6*	0.5*	0.3*	0.4*	0.2*
CMA of Montréal	0.6*	0.7*	0.6*	0.3*	0.4*	0.2*
CMA of Vancouver	0.7*	0.7*	0.6*	0.4*	0.5*	0.3*
CMA of Ottawa-Gatineau	0.6*	0.7*	0.6*	0.4*	0.5*	0.4*
CMA of Calgary	0.8	0.8	0.6*	0.7*	0.7*	0.5*
CMA of Edmonton	0.7*	0.9	0.7	0.6*	0.7*	0.6
CMA of Quebec	0.9	0.7*	0.7	0.6*	0.6*	0.5
CMA of Winnipeg	0.6*	0.7*	0.5*	0.6*	0.7*	0.5*
Medium CMAs	0.7*	0.8*	0.7*	0.7*	0.8*	0.6*
Smaller CMAs †	1.0	1.0	1.0	1.0	1.0	1.0
Day of the week						
Weekday †	1.0	1.0	1.0	1.0	1.0	1.0
Weekend	1.0	1.0	1.7*	1.0	1.0	1.7*
Worked on the reference day						
No †	1.0	1.0	1.0	1.0	1.0	1.0
Yes	1.4*	1.4*	1.0	1.4*	1.4*	1.0

... not applicable

1. Metropolitan area boundaries used in the 2005 General Social Survey are those established in the 2001 Census. See "What you should know about this study" for a list of the CMAs comprising the medium and smaller CMA categories.

† Reference group.

* Statistically significant difference from the reference group at $p<0.05$.

Note: This table presents the odds that a respondent used a car on the reference day, relative to the odds that the reference group did the same thing, when the effect of all other factors shown in the table are controlled for. An odds ratio close to 1.0 for the comparison group means that there is little or no difference between the comparison and the reference groups.

Source: Statistics Canada, General Social Survey, 2005.

that of a person living in a *low*-density neighbourhood. In other words, beyond 10 kilometres from the city centre, the fact that a neighbourhood was mainly composed of single family or semi-detached houses rather than apartments was not correlated with greater or less automobile use.

This situation may be due to a number of factors, including the fact that neighbourhoods in peripheral areas, whether they are low-density or not, are usually zoned for only one purpose (residential, commercial or industrial) rather than multiple uses simultaneously.[11] Because of that, and because the activities in which most people take part during a day are often farther apart, it is difficult to use any means of transportation other than a car.[12] This is especially true since many locations in suburban neighbourhoods, such as shopping centres, movie theatres, office buildings and other places of work, are difficult or impossible to get to on foot or by public transit.

In contrast, the central neighbourhoods of large cities are generally characterized by a greater mix of residential, commercial and industrial uses and by greater density, two conditions that favour adequate public transportation and travel on foot.[13]

Suburban men take their cars

Statistical analysis shows that a number of personal characteristics, other than the type and location of

the neighbourhood in which one lives, are also strongly correlated with automobile use during a given day.

Age and sex are among the factors that have a substantial impact on the probability of driving. On the reference day in 2005, 81% of Canadian men aged 18 and over made at least one trip behind the wheel of a car. The corresponding figure for women was just 66% (Table A.1). This difference, which remains statistically significant when all additional factors are kept constant, is probably attributable to the fact that women are more likely to take public transit and that they are often passengers when they travel by car. In 2005, 31% of women made at least one trip by car as a passenger, compared with only 11% of men.

Baby boomers between ages 45 and 54 were particularly likely to have driven their cars during the day, a finding that remained statistically significant even when all other factors were controlled for. For example, when the density of the neighbourhood of residence and the other factors in the statistical model were kept constant, the odds that people aged 45 to 54 drove a car on all the trips they made in a given day was 2.5 times higher than the odds for 18- to 24-year-olds (Table 3).

Similarly, people with children aged 5 to 12 also had odds 1.6 times higher than people without children that age to have driven on at least one trip. These parents were also more likely to have made trips during the day, regardless of the mode of transportation. Also among the other characteristics associated with a greater probability of driving during the day were being employed and living in a small CMA.

Summary

This article suggests that the physical and geographic characteristics of urban neighbourhoods are pivotal factors in Canadians' dependence on cars for their routine trips to work, to run errands and so on. It found that neighbourhoods composed primarily of typically suburban dwellings and located far from the city centre were characterized by an appreciably higher level of automobile dependence. This confirms a number of facts that are already known about low-density peripheral neighbourhoods.[14]

These results also reveal some new factors, elements that are not considered as often. For instance, the study shows that beyond a certain distance from the city centre, the housing density of a neighbourhood is not likely to have much impact on automobile use.

These findings are important in view of what we know about new neighbourhoods. A large proportion of the housing stock built since 1991 is found far from the city centre in low-density neighbourhoods. As we have seen, these are the neighbourhoods with the highest level of automobile dependence.

Martin Turcotte is a social science researcher in Social and Aboriginal Statistics Division, Statistics Canada.

1. Environment Canada (2006). *National Inventory Report – Greenhouse Gas Sources and Sinks in Canada, 1990-2004*. Ottawa: Minister of the Environment.
2. Environment Canada (2006).
3. Statistics Canada (2006). *Canadian Environmental Sustainability Indicators*. Catalogue no.16-251-XWE. Ottawa: Minister of Industry. Specifically, this publication refers to fine particulate matter, to volatile organic compounds and to nitrogen oxides. For details about the links between automobile usage and polluting emissions, see also H. Frumkin, Frank, L. and Jackson, R.. (2004). *Urban Sprawl and Public Health*. Washington: Island Press.
4. Downs, A. (2002). *Still Stuck in Traffic – Coping with Peak-hour Road Congestion*. Washington: Brookings Institution Press.
5. Technically, these little towns and rural areas belonging to the metropolitan influence zones (MIZ) surrounding census metropolitan areas and census agglomerations are said to be in moderate, weak or no influence MIZ.
6. Downs (2002); Newman and Kenworthy (1999). *Sustainability and Cities. Overcoming Automobile Dependence*. Washington: Island Press.
7. Turcotte, M. (2008). The difference between city and suburb: How can we measure it? *Canadian Social Trends*, 85. Catalogue no. 11-008-XIE, Ottawa: Minister of Industry.
8. Turcotte (2008).
9. See Turcotte, M. (2008). for more details about the relationship between distance to the city core and neighbourhood density.
10. Although the chart appears to show that neighbourhoods with low density are different than those with medium/high density at more than 10 kilometres from the city core, this difference is not statistically significant.
11. Duany, A., Plater-Zyberk, E. and Speck, J. (2000). *Suburban Nation – The Rise and Sprawl and the Decline of the American Dream*. New York: North Point Press.
12. Gillham, O. (2002). *The Limitless City – A Primer on the Urban Sprawl Debate*. Washington: Island Press.
13. Downs (2002); Newman and Kenworthy (1999).
14. It is impossible to account for all the characteristics of persons who live in different types of neighbourhoods and in particular for all the reasons leading a person to choose one neighbourhood rather than another. For example, it is possible that people who like to travel by car are more likely to establish themselves in peripheral suburbs of low density, while those people who like to walk choose a downtown location. In these cases, it is personal preferences that have a greater influence on the choice of transportation than the physical characteristics of the place of residence. Although this possibility has not been completely discarded by researchers, almost all recent studies seem to suggest that urban development has had a direct impact on the level of automobile dependence (see Cao, X, Mokhtarian, P.L. and Handy, S.L. (2007). *Examining the Impacts of Residential Self-selection on Travel Behavior: Methodologies and Empirical Findings*. Davis: Institute of Transportation Studies. In this article, the authors summarize and comment upon existing studies on this topic.) When people are choosing a neighbourhood in which to live, among other factors they consider are location of their workplace, access to schools and other services, geographic proximity to other family members, and so on. When these criteria are foremost in the choice of neighbourhood, the purchase and use of an automobile can become mandatory for most people.

CST Table A.1 Characteristics associated with type of transportation used for daily trips by people living in a census metropolitan area (CMA)[1], 2005

	% of persons aged 18 and over making...		
	At least one trip as a driver	All trips as a driver	All trips by car
Sex			
Women †	66	49	72
Men	81*	69*	76*
Age			
18 to 24 †	57	41	57
25 to 34	74*	58*	73*
35 to 44	80*	65*	77*
45 to 54	82*	66*	80*
55 to 64	77*	62*	79*
65 to 74	70*	57*	78*
75 years or older	55	45	67
Immigration status			
Born in Canada †	76	60	75
Immigrants (before 1990)	74	61	75
Recent immigrants (1990 to 2005)	55*	45*	60*
Presence of activity limitations			
Yes/sometimes	69*	54*	71*
Yes/often	69*	56*	75
No †	75	60	74
Highest level of educational attainment			
No secondary diploma †	64	54	73
Secondary completion	72*	58*	74
College or trade diploma	79*	62*	77*
University degree	77*	59*	71

	% of persons aged 18 and over making...		
	At least one trip as a driver	All trips as a driver	All trips by car
Presence of a child under age 5			
No	73	59	74
Yes †	76*	59	75
Presence of a child age 5 to 12			
No	72*	58*	73*
Yes †	81	63	77
Household income			
Less than $20,000 †	50	39	55
$20,000 to $39,999	68*	55*	70*
$40,000 to $59,999	75*	61*	76*
$60,000 to $99,999	83*	64*	79*
$100,000 or more	83*	65*	77*
Main activity during the last 7 days			
Employed/looking for work †	80	65	77
Caring for children/keeping house	61*	43*	73*
Retired	68*	55*	75
Student	45*	31*	44*
Other activity	65*	51*	72*
Day of the week			
Weekday	75*	60*	72*
Weekend †	71	55	79
Worked outside the home on the reference day			
No	68*	52*	73*
Yes †	81	67	75

1. Metropolitan area boundaries used in the 2005 General Social Survey are those established in the 2001 Census.

† Reference group.

* Statistically different from the reference category ($p < 0.05$).

Source: Statistics Canada, General Social Survey, 2005.

Table A.2 Percentage of persons aged 18 and over using public transit for at least one of their trips on the reference day, 2005

	Toronto	Montréal	Vancouver	Ottawa–Gatineau	Calgary	Edmonton	Quebec	Winnipeg	Medium CMAs	Smaller CMAs
					%					
All Census Metropolitan Areas (CMA)	16	18	12	15	12	9	9	10	7	3
Housing density										
High	23	26	20	20	14	22	15	23	10	8
Medium	19	15	10	22	12	9	4	13	9	5
Low	12	10	7	6	12	6	3	9	4	2
Distance from city centre										
Less than 5 km	26	34	22	21	11	16	13	15	11	5
5 to 9 km	31	25	20	21	11	7	7	10	6	3
10 to 14 km	22	17	12	14	11	11	2	8	5	F
15 km or more	11	11	3	6	18	1	3	3	4	F
Administrative boundaries										
Suburban municipalities	9	14	7	10	5	3	5	F	..	..
Central municipality	25	30	23	17	13	11	9	12	..	..

.. not available for a specific reference period.

F too unreliable to be published

Notes: Metropolitan area boundaries used in the 2005 General Social Survey are those established in the 2001 Census. See "What you should know about this study" for a list of the CMAs comprising the medium and smaller CMA categories.

Source: Statistics Canada, General Social Survey, 2005.

Canadians abroad

by Margaret Michalowski and Kelly Tran

Global migration is not a recent phenomenon. For different reasons, people have been making the journey from one location to another throughout history. Today, people move in order to forge new lives for themselves, for education or employment opportunities, for family or for lifestyle reasons. Others move because they are forced to do so by circumstances in their home country. Whatever the reason for migration, the movement of people across borders has had a significant impact on their countries' population. And Canada is no exception: often viewed as a country that is the choice destination for thousands of immigrants, Canadians take pride in accepting new citizens from many different parts of the world. The cumulative effects of this migration are such that, at the turn of the 21st century, two in five Canadians aged 15 years or older were either immigrants themselves or were the children of immigrants.[1]

However, the impact of immigration can easily overshadow the other component of migration, namely emigration of Canadians to other parts of the world. In the modern world, advances in transportation have made the global system of migration dynamic and often circulatory, meaning people may move from their birth country to another country, and then subsequently migrate back to their birth country or on to a third country. At the same time, new communications technologies allow them to remain in contact with family and friends around the world. The United Nations reports that there were upwards of about 177 million international migrants in 2005, an increase from about 75 million 40 years earlier.[2] The increasingly integrated and interconnected world, and the continuing global competition for skilled migrants, mean that these population movements will persist.

Presently, while there are broad estimates of the number of Canadians who go abroad, there is little by way of information on who leaves and where they go (see "Estimating Canadian emigration"). Nor is much known about the association between destination of emigrants and their characteristics. Do certain destinations attract specific groups of Canadian residents? When they leave, do they leave with the intention of staying abroad permanently or temporarily? The answers to these questions can be varied and complex. Not a lot of concrete information about emigration is available and what is available tends to be fuzzy and based on different concepts of migration and movement. Migration affects the population of two places – the place one goes to as well as the place one leaves. It is the information from the place one leaves that is often fuzzy, although it is possible to draw upon information from the place one goes to in order to understand more about the phenomenon. However, there are numerous systems of migration characterized by various concepts, definitions and thresholds, and it is an onerous undertaking to standardize concepts and make direct comparisons between countries.

The goal of this article is not to provide a complete statistical accounting of the emigration of Canadians. Rather, by examining five countries with which Canada has close ties of kinship and friendship – the United States, the United Kingdom, Australia, Italy and Poland – it seeks to develop a profile of people who leave Canada. The concepts and definitions used are those of the specific country that graciously assisted in providing the best picture they can of the Canadians who reside within their borders.

Where in the world are Canadians?

The Organisation for Economic Cooperation and Development estimates that 1.1 million people who were born in Canada were residing in other OECD countries at the beginning of the 21st century.[3] Of these Canadian-born emigrants, the lion's share (82%) resided in the United States. As of the year 2000, over half of the Canadian-born residents of the US (58%) had been living there for over 20 years; another 30% had been there for less than 10 years. Many were so well settled that they evidently had no intention of returning to Canada: by 2000, 46% of Canadian-born emigrants had become naturalized American citizens, according to the 2000 US Census.

Several other OECD countries were home to a substantial number of Canadian-born residents. Most popular in 2000 was the United Kingdom, where an estimated 72,500 Canadians resided.

CST What you should know about this study

This article is not intended to provide a complete statistical accounting of the total number of Canadians residing abroad. Rather, it is intended to utilize the available data in order to better understand the current trends and stock of Canadians residing in selected countries. It is derived from a larger study conducted to assess the feasibility of using the immigration data collected by receiving countries in order to provide information to sending countries about their emigrants. (To obtain more information about this pilot project, visit www.unece.org)

Though Canadians who go abroad select numerous destinations, this report focuses on emigrants who go to five countries: Australia, Italy, Poland, the United Kingdom and the United States. These five countries worked in cooperation with Canada to exchange migratory information for the larger study from which this article is derived. The perspective of migration is from the receiving country, that is, the specific country to which Canadians went. In this sense, emigration from Canada becomes "immigration" to another country, and emigrants from Canada can be viewed as immigrants in the receiving country. Data from Australia are obtained from the Overseas Arrivals and Departures records, which is a passenger card system that collects information on all overseas arrivals to, and departures from, Australia. Italy provided data from its population register, which is a record of persons who are residents of Italian municipalities. Polish data come from the national population register, which includes Polish citizens and foreigners with either permanent residence in Poland or a Polish residence card registered for a temporary stay of more than two months. Data from the United Kingdom come from the International Passenger Survey, which collects information from passengers travelling through the major airports and seaports of the United Kingdom and produces data on people coming to or leaving the UK. The data from the United States are from the American Community Survey as well as from the Office of Immigration Statistics, which keeps records of applications for lawful entry into the United States.

Because these different data sources have specific purposes in their respective countries, exactly who is considered an "immigrant" in that country is not necessarily consistent across all of the countries included in this study. "Canadians" could be defined in different ways by the receiving countries: the concept could include only those people who were born in Canada, but it could also encompass naturalized Canadian citizens or even someone who simply resided in Canada at some point. Unless otherwise stated, for the purposes of this article, Canadians or Canadian emigrants are defined as individuals who formerly resided in Canada, regardless of place of birth or Canadian citizenship status. This definition encompasses all those who were once residents of Canada but were later residing in another country, regardless of their intentions for permanent, temporary or long-term stay outside Canada.

A permanent emigrant from Canada is somebody who left the country and at the time of their departure indicated that they did not who intends to return. In contrast, a long-term or temporary emigrant is somebody who leaves for a specific period of time, usually longer than 12 months, but who intends to one day return to Canada. Not all countries have information on long-term (temporary) migrants or permanent migrants.

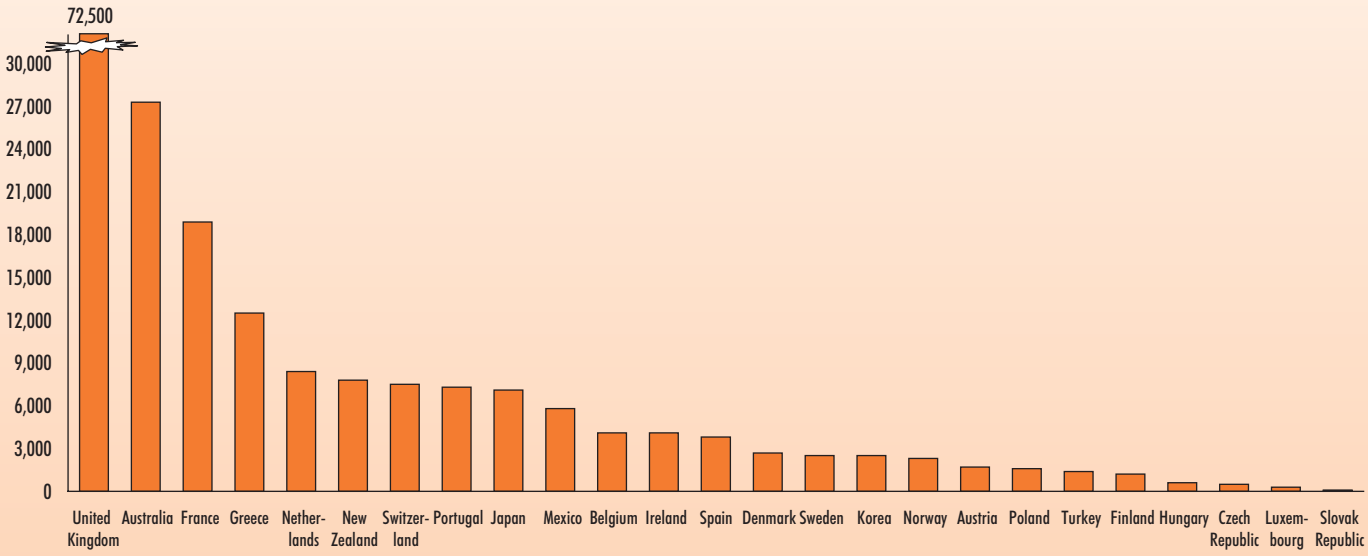
Considerably fewer – about 27,300 – lived in Australia, but the majority (61%) had been there for more than 10 years. France and Greece were the only other OECD countries which reported having more than 10,000 Canadian-born residents in the country (Chart 1).

While the OECD data provide a glimpse of the location of Canadians living abroad, it does not provide the full picture. Because the OECD reports only on people who are Canadian-born, missing from the picture are migrating Canadians who were not born in Canada. For example, data from the American Community Survey found that only 43% of Canadians living in the US had been born in Canada. About 32% had been born in the US, while the remaining 25% had drawn their first breath in a third country (that is, neither Canada nor the US). The example provided by Canadian migration to Poland is even more striking: only 1% of Canadians who moved to Poland were Canadian-born, while the vast majority (88%) had actually returned to their country of birth. Evidently, leaving to live in another country is not confined only to those Canadians who were born in Canada.

Migratory exchanges between Canada and other countries

Much of what is written about Canadians abroad focuses on Canadians residing in the United States. Due to a combination of factors – including a shared land border and similar language, culture

Chart 1 Of those Canadians living in OECD countries other than the US,[1] the greatest number reside in the UK



1. Over 80% of Canadian-born emigrants in OECD countries live in the US.

Source: Dumont, J.C. and Lemaitre, G. 2005. *Counting migrants and expatriates: A new perspective.* Social, Employment and Migration Statistics Working Paper. OECD: Paris.

and institutions – there has always been a flow of Canadians who head south of the border either permanently or temporarily. Of the five countries selected for this study, the United States by far welcomes the greatest number of Canadian emigrants. Between 2000 and 2004, an average of about 68,900 Canadians departed for the United States every year; in contrast, an annual average of about 6,100 US residents immigrated (obtained permanent resident status) to Canada during the same period (Chart 2).

Canada's long history of British settlement means that there are close ties between Canada and the United Kingdom. Many of the immigrants to Canada in the past two centuries have been from the UK, and many second generation Canadians, as well as the third generation and beyond, have strong links to extended family. Therefore, it should not be surprising to see flows of migrants in the opposite direction, as large numbers of Canadians move to the United Kingdom. Between 2000 and 2004, the UK received an average of 8,500 Canadians each year while sending Canada about 5,200 British emigrants.

Immigrants from Italy have also come over many decades. Since the beginning of the 20th century, a large number of Southern Italians have moved to Canada in search of work and improved economic conditions. Many worked on building the railways and when this project was completed, they remained in Canada and settled in the major cities.[4] The 2001 Census revealed that over 318,000 people born in Italy now call Canada home. Return migration is weak, with fewer than 1,000 Canadians per year leaving Canada to live in Italy during the five-year period 2000 to 2004.

Immigration from Poland has come in three waves: first starting in the 1920s, then after the Second World War and most recently in the 1980s. In 2001, over 182,000 Polish-born persons were living in Canada. About one-quarter of them had immigrated before 1961, while over one-third (38%) had arrived in the 1980s, a decade of significant political unrest in Poland. Another one-quarter came to Canada in the 1990s. (In fact, Poland was among the top ten source countries of all immigrants entering Canada in the 1990s.) The rate has slowed in recent years, however; from 2000 to 2004, an annual average of 1,200 Polish immigrants arrived in Canada while about 300 Canadians went to Poland.

Australia and Canada share much in common including English as an official language, a similar legacy of immigrant settlement and membership in the Commonwealth. The two countries also share some migratory exchange of populations. In the post-war period 1951-71, approximately 36,000 Australians arrived in Canada; by 2001, the Census counted 18,910 Australian-born immigrants living in Canada. In fact, nearly 1,000 immigrants from Australia are admitted to Canada annually; meanwhile, about 1,700 Canadians departed for Australia each year between 2000 and 2004.

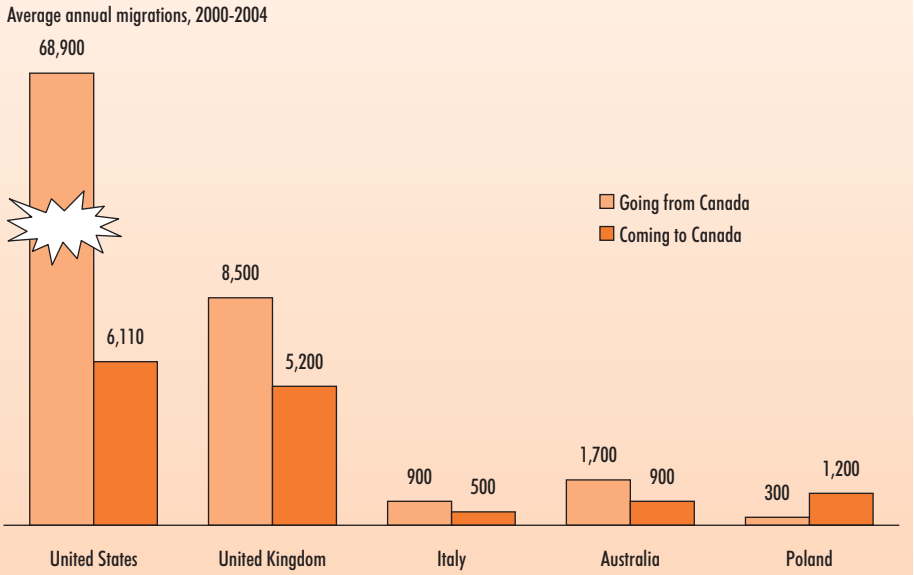
With the exception of Poland, the number of people who immigrate to Canada from the other countries in this study is lower than the number of Canadian departures in the first four years of the new millennium. For the United Kingdom, the emigrant-to-immigrant ratio was 1.6 Canadians leaving for every Briton entering Canada; both Australia and Italy had slightly higher ratios of 1.8 and 1.9, respectively. For Poland, it was 0.3 Canadians for every Pole.

Of course, the largest ratio was recorded for flows between the United States and Canada, with Canada sending 11.3 emigrants for every immigrant it received from the US. Keep in mind, however, that these imbalances may in part be artifacts of record-keeping systems used at the border. Canadian immigration numbers do not include returning Canadian citizens or people who enter Canada under different immigration authorizations (such as foreign workers, international students or other non-permanent residents). So while Canadian citizens who go abroad for a period of time and then return to Canada are part of the migratory in-flow, they are not counted in the immigration figures.[5]

Young emigrants head to the US, the UK and Australia

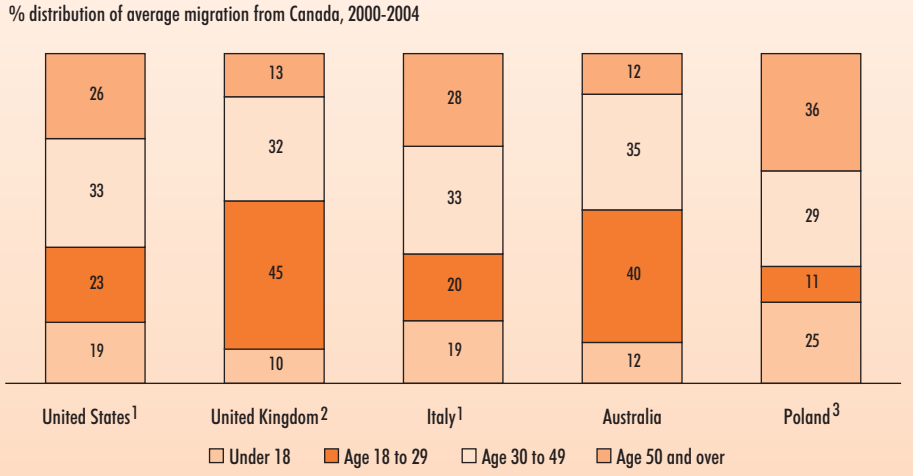
Voluntary migration often takes place when people are in their prime adult years. Migrations are generally not random occurrences in life and the selective nature of migration means that people make decisions to move to another country after completing their post-secondary schooling, when they are in the labour market, when they marry a person who lives in a different country, and so on. At other times, people may migrate because they have decided to retire in another country; and when families migrate, a large number of school-aged children may be migrating with their parents. However, the life course trajectory is such that a large proportion of migrants are often young adults.

Chart 2 The US is the predominant destination country of Canadians living abroad



Sources: Citizenship and Immigration Canada, Landed Immigrant Database; United States Census Bureau; American Community Survey; Office of National Statistics (United Kingdom), International Passenger Survey; Australian Bureau of Statistics, Overseas Arrivals and Departures Data; Ministry of the Interior (Italy), Population registers (Anagrafe); Central Statistical Office (Poland), Population registers.

Chart 3 Three-quarters of Canadians migrating to the UK and Australia are young and prime working-age adults (18 to 49 years)



1. Data for 2000 to 2003 only.
2. Data represent a 3-year moving average.
3. Age under 20 and Age 20 to 29.

Sources: Citizenship and Immigration Canada, Landed Immigrant Database; United States Census Bureau; American Community Survey; Office of National Statistics (United Kingdom), International Passenger Survey; Australian Bureau of Statistics, Overseas Arrivals and Departures Data; Ministry of the Interior (Italy), Population registers (Anagrafe); Central Statistical Office (Poland), Population registers.

According to the *American Community Survey*, 68,900 Canadians crossed the 49th parallel to the United States in 2003,. About 3 in 10 were aged 30 to 49 years;[6] about 2 in 10 were aged 18 to 29. These young adults may be in the US for various reasons, including education or employment; in fact, permanent immigrants to the US are most often admitted under employment-based preferences. People from Canada also go south when they are older, with about 3 in 10 being older than 50. Older migrants are more likely to be Canadian-born than American-born or secondary migrants from other countries (Chart 3).

Although the volume of migration from Canada to the United Kingdom is much smaller – around 8,500 yearly between 2000 and 2004 – it is also concentrated mainly among the young. Nearly half (45%) of all Canadians who were living in the United Kingdom were young adults aged 18 to 29 years old. Another 32% were in their thirties or forties. Those aged 50 and over averaged no more than 13% of the migrants during that four-year period.

The bulk of the Canadian-born population residing in the UK were of prime working age, that is between ages 25 and 54. Employment opportunities are often strong motivating factors in the decision to migrate abroad. According to UK Census data from 2001, 78% of working-age Canadian-born residents of the UK were employed and 3% were looking for work. Another 4% were students and 8% were looking after their home or family.

The other three countries in this study – Australia, Italy and Poland – had much lower annual flows from Canada. On average over the period 2000-04, the yearly numbers ranged from 1,700 people going to Australia to roughly 300 people moving to Poland. A large proportion of those Canadians who chose to relocate to Australia – two in five – were 18- to 29-year-olds. For young people, Australia may be an attractive destination because of the similarities in language and culture, but also because of the climate, the geography and the appeal of being half a world away from home. In contrast, only about 1 in 10 people who moved from Canada to Australia were age 50 or over.

Migration from Canada to Italy has been relatively stable, and has recently ranged from just over 800 people in 2000 to about 1,000 in 2003 (the most recent data available). A large proportion of these migrants – almost three in ten – were aged 50 years or older; another one-third were between the ages of 30 and 49. In further contrast to those Canadians who chose to relocate to the US, the UK and Australia, the movement of Canadians to Italy is largely of people who were born outside Canada. Older migrants, especially those who return to their birth country, may be attracted by the emotional or cultural ties that remain there. Perhaps going back to their birth country in order to be surrounded by the memories of their youth is a decision many of these older migrants to Italy have taken.

In respect to Canadian migration to Poland, an increasing amount of the flow was also among older people. In 2000, about one-third of migrants were over the age of 50; however, this proportion increased steadily and by 2004, 4 in 10 were age 50 or over. It may be the case that Polish immigrants are returning to Poland in their later years after a period of residence in Canada. This suggestion is supported by other data which show that while 1% of Canadian-born emigrants to Poland were over age 50, 17% of Polish-born emigrants were age 50 or older.

Leaving Canada to go abroad is often temporary

Only Australian data allows the distinction to be made between long-term and permanent migrants. (A long-term migrant is somebody who intends to reside in Australia for at least one year but not necessarily permanently.) According to these records, the majority of Canadian migration to Australia is long-term rather than permanent. Between 1995 and 2004, an average of 1,250 Canadians moved to Australia in a given year; between 75% and 90% of these people indicated that they only intended to live there on a long-term basis. Australia appears to be a destination of choice among Canadian migrants in the 18 to 29 year age group. Perhaps drawn by travel and educational opportunities, temporary work experience or any number of other reasons, 89% of young Canadian migrants say that while they intend to live in Australia for at least a year, they do not plan to settle on a permanent basis.

Returning home or leaving for the "unknown"

The decision to migrate abroad is a complex one that is conditioned upon age, marital status, economic status and other cultural or lifestyle preferences. It is not necessarily only the Canadian-born population that leaves Canada. Immigrants to Canada may also subsequently migrate, either by returning to their previous country of residence or by taking up residence in another country. For example, it is estimated that 35% of Canadian male immigrants leave Canada within 20 years of arrival, although the majority (60%) have done so within the first year.[7] But at retirement age, Canadian immigrants are also leaving to return to their country of origin. Whether they return to their birth country permanently or maintain some residency ties to Canada cannot be determined due to the limitations in the data.

The most striking example of the phenomenon of return migration is provided by data from Italy's 2001 Census. These data show that the majority of Canadians who had moved to Italy were Italian-born. In fact, 71% of people who had lived in Canada as late as 2000, but were living in Italy by 2001, were Italian-born. Over half (52%) of these returning immigrants

were over the age of 50. As a point of comparison, just 7% of Canadian-born migrants to Italy were in the same age category.

Polish Census data for 2002 show a similar trend. The majority of those who moved to Poland from Canada were Polish-born, but in this case they tended to be younger. Of those who had resided in Canada in 2001 but were living in Poland in 2002, 87% were Polish-born. The majority (57%) were between the ages of 30 and 49. Only 1% of Canadians in Poland were actually Canadian-born and the vast majority were under 18 years of age, likely due to the return migration of families with Polish-born parents and their Canadian-born children.

Return migration is also found among American-born people who once immigrated to Canada. The 2004 American Community Survey shows that 32% of the people who moved to the US from Canada in 2003 had been born in the US. Another 25% were secondary migrants, that is, people born in neither Canada nor the US but who subsequently emigrated from Canada. Nearly half of migrants were in the age range of 30 to 49 years. The return migration of American-born people shows that much of the migration between Canada and the US is circulatory, Moreover, the large share of migrants who were born in neither Canada nor the US suggests that there is a considerable secondary migration occurring among Canada's foreign-born population.

More about flows South of the border

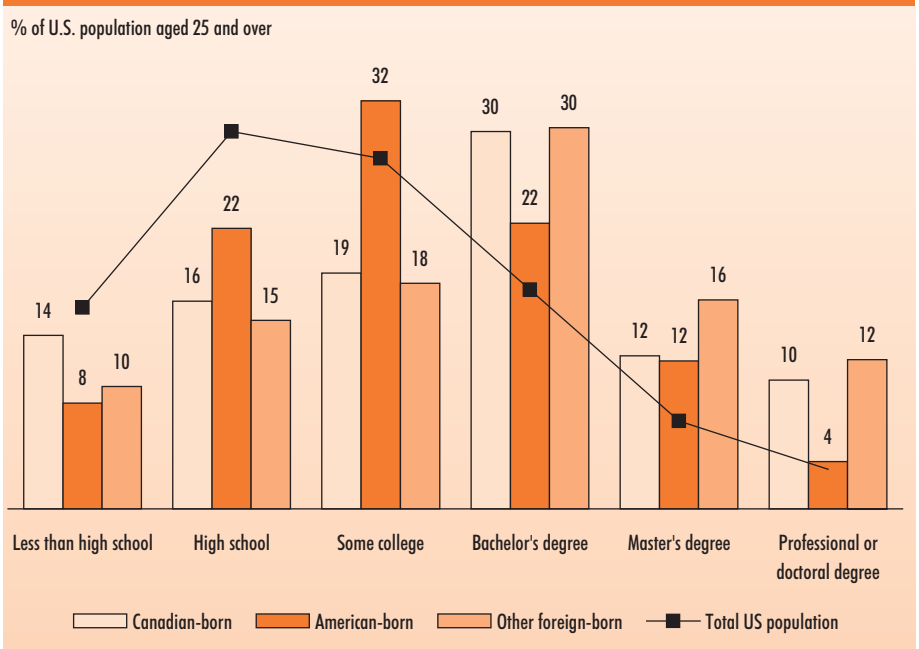
There has always been public discussion about migratory exchanges between Canada and the United States. Much of the focus is on the southerly flow of Canadians into the United States rather than the other way around. This is despite the fact that the United States has consistently been among the top source countries of immigrants to Canada throughout the past century.

Between 1995 and 2004, an annual average of 21,000 in-migrants from Canada were granted permanent residency status in the United States. Canadians are granted 'green cards' to become permanent residents of the US but getting a green card is not the only way Canadians can legally enter the US. Many green card holders may have already been residing in the US for some time, since temporary authorizations account for another large proportion of migratory flow of Canadians to the United States. During the mid-1980s and up to 1999, temporary authorizations such as student visas, temporary work permits and intra-company transfers were relatively stable and did not exceed 20,000. After 2000, the number climbed towards 40,000. But by far the largest number of temporary authorizations held by Canadians are NAFTA permits. The number of both first-time and renewed permits in Canadian hands exceeds 100,000; however, the number of people obtaining a NAFTA authorization for the first time was never more than 40,000 between 1995 and 2002.[8]

Canadians who migrated South were more highly educated than the population of their host country. Over half of Canadian-born residents in the US aged 25 or older had university education at the bachelor level or higher; this compares with just over one-quarter of all US residents in the same age group. This finding illustrates the selective nature of migration and the loss of highly educated individuals to other countries (Chart 4).

Canadian-born residents are three times less likely to be unemployed than the American-born: 1.7% versus 5.8% in 2000, according to the US *Census Bureau*. Being highly educated, they tend to be concentrated in more highly skilled or professional jobs. For example, 52% of the employed Canadian-born population worked in a management or professional occupation; another 24% were in sales or office occupations. One-quarter of these workers held positions in the

CST Chart 4 Canadian- and other foreign-born emigrants to the United States have a higher level of education than the US population as a whole



Source: United States Census Bureau, American Community Survey, 2004.

CST Estimating Canadian emigration

Canadians abroad include individuals who were once residents of Canada but are now found living in other countries. They may be Canadian-born persons or immigrants to Canada who subsequently moved to another country; Canadians abroad also include people who leave Canada either permanently or temporarily. People who vacation in another country (for instance, snowbirds) are not considered to be living abroad and as such are not included in the target population of this study.

While there is no definitive count of Canadians scattered around the world, some estimates put the number at 2.7 million.[1] Compiling comprehensive information about Canadians living abroad is challenging because there are no complete records of the permanent or temporary exit of everybody who leaves the country. Using the immigration data of the destination countries can be difficult because the definitions of international migrants differ from nation to nation; also, each country specifies its own system of recording the in-migration of peoples across their borders. Where there are different mechanisms for recording these movements, there will be different definitions of migrants and inconsistencies of coverage.

Given the complexity of accounting for the total number of Canadians residing abroad, there are few reliable estimates of their numbers around the world. In spite of the challenges involved in compiling international statistics, international organizations have made some attempts to estimate the number of people residing outside their birth country.

According to a 2006 study, an estimated 1 in 1,000 Canadians leave Canada in a given year. Departure rates generally followed the economic cycle, but other factors were also involved in the decision to leave Canada. For instance, younger working age people of 25 to 34 years were more likely to leave than older people and immigrants had a stronger propensity to leave than people born in Canada.[2]

While there is little by way of figures on the exact number of people who leave Canada, estimates of emigrants[3] (that is, permanent departures only) show that the emigration rate has been low but not negligible. Since 1990, the number of permanent emigrants from Canada annually has exceeded 50,000 only three times. Emigration peaked in 1997, when an estimated 52,800 permanent emigrants left the country, the equivalent of 0.2% of Canada's total population that year. More than offsetting this out-migration, though, has been the increasing volume of immigrants, whose numbers have exceeded 200,000 people annually for most of the 1990s.

Other estimates based on Census Coverage Studies estimate that about 500,000 people who resided in Canada in 1996 but left in a subsequent year were still abroad in 2001. This figure includes everybody who left (whether permanently or only temporarily) and represents a considerable increase from the estimates of 400,000 emigrants calculated for the period 1991-96 and of 325,000 emigrants for 1986-91.[4]

1. Zhang, Kenny. (2006). Recognizing the Canadian Diaspora. *Canada Asia Commentary*, 41. March. Asia Pacific Foundation of Canada.
2. Finnie, Ross. (2006). *International Mobility: Patterns of Exit and Return of Canadians*, 1982 to 2003. Statistics Canada Catalogue no. 11F0019MIE. Working paper no. 288. Ottawa: Minister of Industry.
3. Emigration is estimated from administrative sources of the 'gross flow' of migrants out of Canada. Data to inform these estimates come from several sources, including tax data and the Child Tax Benefit program from the Canada Revenue Agency and from the Office of Immigration Statistics at the United States Department of Homeland Security. Emigration figures are estimates based on a set of assumptions and from data sources which may not have complete coverage. As such, emigration figures are among the most difficult to estimate and those cited provide a glimpse of what the total amount of emigration may be. Statistics Canada *Annual Demographic Statistics*, 2005. Catalogue no. 91-213-XPB. Ottawa: Minister of Industry.
4. These numbers do not include everybody who left Canada over each of the 5-year periods, but only those who left and had not returned by the end of the period.

education, health or social services industry, while another 13% worked in a professional, scientific, management or administrative industry.[9]

Summary

Canada is often thought of as an immigrant-receiving country, but it is also a player on the world stage as a source country of migrants. Whether Canadian migration abroad is temporary or permanent, long term or short term, far or near, Canadians are making their mark in other countries.

Using selective destinations, this article has shown that Canadian emigration abroad is just as selective as in-migration to Canada. Indeed, many Canadians with high levels of education depart for other parts of the world, and their employment levels are demonstrably higher in

their settled countries than those of the host countries' populations. The United States is still by far the largest recipient of Canadians on either a permanent or a temporary basis. Other countries such as the United Kingdom and Australia also welcome Canadians. Italy and Poland, which have sent migrants to Canada in the past, are starting to see a trickle of their migrants return in their golden years.

Emigration is often a part of circulatory movement, as those who were former in-migrants to Canada in previous decades become out-migrants by returning to their birth country. It would be interesting to compare the emigrants' profile shown in this study with those of Canadian emigrants to other countries, especially in Asia. Unfortunately, expanding this analysis is greatly restricted by lack of data.

CST

Margaret Michalowski is Chief, Census Subject Matter Program, and **Kelly Tran** is an analyst with Social and Aboriginal Statistics Division, Statistics Canada.

1. Immigration is increasingly seen as a main driver of population growth. Between 1996 and 2001, 87% of the growth in Canada's population was attributed to recent immigrants who arrived during the period. Within the next few decades, net migration could be the sole source of population growth in Canada as the rate of natural increase declines in proportion to the net migration rate.
2. This number does not include the number of refugees around the world, which is usually considered part of the international migration flows. In 2000 the United Nations estimated the number of refugees around the world to be around 13 million. Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. *Trends in Total Migrant Stock: The 2005 Revision*. http://esa.un.org/migration Accessed on January 8, 2007.
3. Dumont, J.C. and Lemaitre, G. (2005). Counting Migrants and Expatriates: A New Perspective. *Social, Employment and Migration Statistics Working Papers No. 25*. Organisation for Economic Cooperation and Development: Paris. The OECD comprises 30 countries, mainly from the Western hemisphere and some Asian countries including Japan and South Korea as well as Australia and New Zealand. The OECD member countries represent 20% of the world's population.
4. Knowles, V. (2000). *Forging our Legacy: Canadian Citizenship and Immigration, 1900-1977*. Citizenship and Immigration Canada. http://www.cic.gc.ca/english/resources/publications/legacy/index.asp Accessed on May 1, 2006.
5. While it would appear that there is a mass exodus of people from Canada to these countries compared to the number who come into Canada, official population estimates show that overall, for every 1 emigrant out of Canada, there were 6 people who immigrated to Canada. This translates into a ratio of less than 0.2. This demonstrates that although there is some population loss due to emigration, the out-migration is more than offset by the number of people who immigrate to Canada. *Annual Demographic Estimates: Canada, Provinces and Territories, 2005-2006*. Statistics Canada Catalogue no. 91-215-XWE. Ottawa: Minister of Industry. *International migrants, by age group and sex, Canada, provinces, and territories, annual (persons)*. CANSIM Table 051-0011.
6. An even higher proportion (48%) of the foreign-born moving from Canada to the United States were 30 to 49 years old.
7. Adyemir, A. and Robinson C. (2006). Return and Onward Migration among Working Age Men.*Analytical Studies Branch Research Paper Series*. Statistics Canada Catalogue no. 11F0019MIE – No. 273. Ottawa: Minister of Industry.
8. Another way of examining out-migration from Canada to the US is to look at the volume of in-migrants who were new arrivals, that is, those who actually moved to the US during the year. The Office of Immigration Statistics data show that the number of people granted permanent residency was relatively stable over the 1995 to 2004 period, not exceeding 5,500 persons or 2% of all those who were granted permanent residency in the United States in 2005. United States. *Yearbook of Immigration Statistics, 2005*. Department of Homeland Security: Washington, D.C.
9. U.S. Census Bureau. Census 2000 Special Tabulations (STP-159).

Who gets any sleep these days? Sleep patterns of Canadians

by Matt Hurst

Sleep is something we all need. One third of our lives is spent sleeping. When we don't get enough sleep, our productivity and behaviour are affected. This impacts the quality of work we do, and the quality of our family and personal life at home. It affects our ability to get along and network with others, which is considerably diminished if we are "grouchy" from lack of sleep.[1] Sleep also plays an important role in our personal health. Lack of sleep is associated with increased risk of heart disease, stroke, diabetes, obesity and depression.[2]

So there are numerous reasons why it is important to get a good night's sleep. Quantifying this is tricky because what constitutes a good night's sleep varies quite a bit from person to person. Experts say that most adults need somewhere between 7 and 9 hours of sleep every night to feel refreshed,[3] underscoring the variability in what "enough" sleep means for different people.

However, comparing groups of people in different job and family situations can help to identify influences, apart from our bodies' physiology, that affect our sleep.

In this article, we look at how work, family characteristics and time stress affect sleep times of Canadians aged 15 and over. At the same time, we focus on the differences in sleep times consistently reported between men and women.

Men sleep less than women

It may be hard to convince some people that men sleep less than women. The pop culture image of the superwoman, who continues to do many of the traditional "woman's jobs" in the family as well as being an equal breadwinner, suggests that women should have no time to sleep at all. However, studies consistently find that women sleep more than men.

A previous Canadian study based on both the 1998 and 1992 General Social Survey (GSS) results[4] confirmed this conclusion, as did a recent article on the epidemiology of sleep in the U.S.[5] There is no standard explanation for why men and women sleep different amounts, although a Finnish study suggested one possible interpretation may be that women's need for sleep is greater than men's.[6]

The 2005 GSS confirms that men sleep less than women. In their sleep diary, respondents aged 15 and over were asked to record the time they fell asleep and the time they woke up. The data from these diaries show that men slept for an average of 8 hours and 7 minutes, about 11 minutes less than women (Table 1).

The belief that women suffer more disturbed sleep because they wake more easily is also confirmed. Indeed, the GSS does show that although women sleep more than men, they reported a higher rate of trouble falling asleep or staying asleep: 35% of women versus only 25% of men, a 10 percentage point difference (Table 2).

While sleep quality may seem to offer a possible explanation for the difference we see in reported sleep times between the genders, men sleep less than women whether they report having problems sleeping or not. Further research is warranted to explore the impact of quality of sleep on the sleeping habits of Canadian adults.

Working full-time makes a difference

Overall, the more we work, the less we sleep. According to the GSS diary, working full-time translated into 24 minutes less sleep compared to not being in the labour force.

When we look at labour force attachment by gender, it is clear that working full-time is a key factor associated with the gender sleep gap (Chart 1). Indeed, the data confirm that men who work full-time sleep 14 minutes less than women who work full-time, or about 85 hours or 3.5 days less sleep per year. However, for Canadians who work part-time or have no employment, there is no difference between the sexes in terms of sleep time.

CST Table 1 On average men sleep less than women across most demographic categories

	Both sexes	Men	Women
	minutes (480 minutes = 8 hours)		
Average	492	487	498*
Children under 15 years old			
No children †	498	491	503*
1 child	481[a]	476[a]	486[a]
2 or more children	473[a]	466[a]	478[a]
Age			
15 to 24	522[a]	517[a]	527[a]
25 to 39 †	485	483	487
40 to 59	480	472	487*
60 and over	500[a]	491	508[a]*
Marital status			
Married (includes common-law) †	485	478	493*
Widowed	502[a]	487	506[a]
Separated or divorced	484	485	484
Single (never married)	509[a]	506[a]	513[a]
Time crunch index of time stress related questions			
Low	505[a]	499[a]	511[a]*
Medium †	489	485	494*
High	476[a]	464[a]	486[a]*
Do you have trouble falling asleep or staying asleep?			
No †	495	489	502*
Yes	486[a]	479[a]	492[a]*
Do you consider yourself a workaholic?			
No †	498	493	503*
Yes	477[a]	470[a]	484[a]*
Do you feel trapped in a daily routine?			
No †	495	491	499*
Yes	488[a]	478[a]	496*
Do you feel constantly under stress?			
No †	499	493	505*
Yes	481[a]	472[a]	487[a]*
When you need more time, do you tend to cut back on your sleep?			
No †	498	492	505*
Yes	486[a]	481[a]	491[a]*
Exercised			
No †	493	487	499*
Yes	483	485	480[a]
Shift work			
Daytime schedule †	481	474	488*
Other	488	482	495
Personal income ($)			
0 to 19,999	510[a]	509[a]	510[a]
20,000 to 39,999 †	484	484	485
40,000 to 59,999	473[a]	472	476
60,000 or more	470[a]	466[a]	479
Paid work (minutes)			
None	507[a]	505	508[a]
1 to 240 †	493	498	488
241 to 420	490	477	500
421 to 540	478[a]	473[a]	484
541 and over	452[a]	450[a]	455[a]
Commute time for workers (minutes)			
1 to 30 †	483	475	491*
31 to 60	476	472	482
60 and over	461[a]	451[a]	474[a]*
Day of week			
Sunday to Thursday †	486	480	493*
Friday	505[a]	506[a]	505
Saturday	510[a]	503[a]	516[a]

† Reference group.
* Statistically significant difference from men at $p<0.05$.
[a] Statistically significant difference from the reference group at $p<0.05$.
Source: Statistics Canada, General Social Survey, 2005.

Shift work and problems sleeping

Over one quarter of Canadian workers have non-traditional work schedules, often referred to as shift work. It comes in many forms—a regular evening, night or graveyard shift, rotating or split shift, on call, casual or irregular work schedule—but almost all can affect a person's health, since the night is the body's most natural time to heal and regenerate.

Not surprisingly, shift work has a significant effect on worker fatigue,[7] and affects quality of sleep for both men and women shift workers.[8] When work schedules creep into the night, they create a non-typical sleep schedule that disturbs the body's natural pattern of rest and rejuvenation. Multiple studies show that the disruption of natural biological rhythms is related to a variety of physical and mental problems, including cardiovascular disease, hypertension, asthma, diabetes and depression.[9]

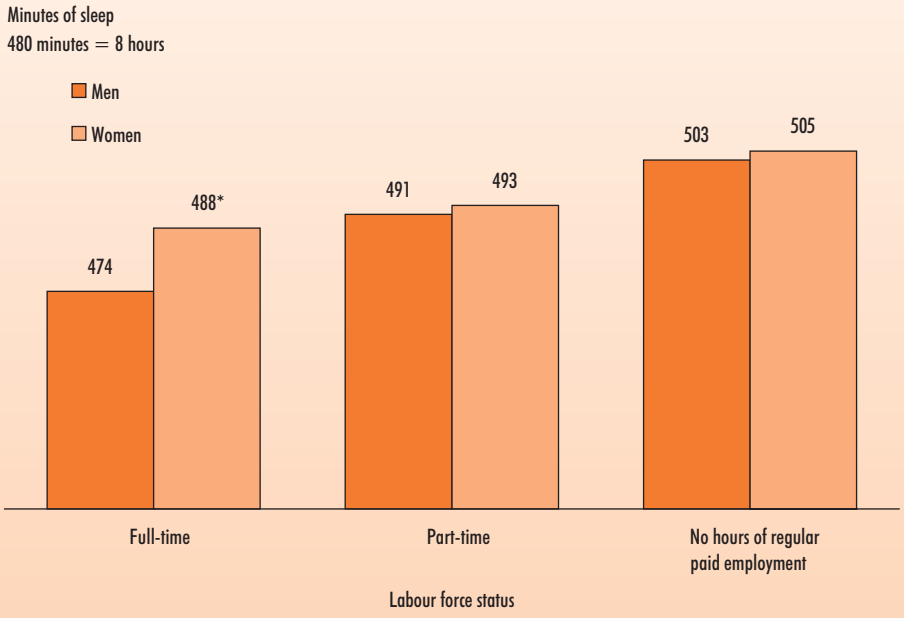
While "the most common health complaint of shift workers is lack of sleep,"[10] the GSS diary results show that the issue is more complex. Workers on a daytime schedule slept 8 hours and 1 minute on average; Canadians with non-typical work schedules slept for a similar amount of time. But it is important to note that the quality of sleep is different. Fully one-third of workers with non-typical schedules said they had problems falling asleep or staying asleep compared to only one-quarter of workers with regular daytime jobs.

Table 2 More Canadian women than men reported problems falling asleep or staying asleep

	Both sexes	Men	Women
		percentage	
Average	30	25	35*
Children under 15 years old			
No children †	30	25	36*
1 child	30	25	35*
2 or more children	27[a]	25	29[a]
Shift work			
Daytime schedule †	26	21	32*
Other	34[a]	31[a]	38[a]*

† Reference group.
* Statistically significant difference from men at $p<0.05$.
[a] Statistically significant difference from the reference group at $p<0.05$.
Source: Statistics Canada, General Social Survey, 2005.

Chart 1 Working full time makes a difference to men's sleep time



* Statistically significant difference from men at $p<0.05$.
Source: Statistics Canada, General Social Survey, 2005.

Less sleep with higher income, longer work days and commuting

According to the 2005 GSS, Canadians with personal income of $60,000 or more slept 7 hours and 50 minutes on average. In contrast, their lower income counterparts making less than $20,000 slept 40 minutes more at night. Supplementary analysis of people in the labour force confirms this trend (results not shown).

High-income Canadians tend to dedicate more time to their paid work, spend less time with their children and less time engaged in leisure activities; the large majority also feels rushed more than a few times a week.[11] So, it is no surprise that this has an impact on their sleep.

Yet, whatever a person's income, working long hours means getting less sleep. On average, people who had worked for more than 9 hours on the diary day slept for only 7 hours and 32 minutes; this was 41 minutes less per night than people who had worked for less than 4 hours. And it was almost an hour's less sleep (55 minutes) than that reported by people who did not work any paid hours at all.

Among women and men who worked fewer than 9 hours per day, men slept 12 minutes less than the women on average. This difference disappears once workers are putting in more than 9 hours. Men and women who work over 9 hours during the day sleep almost the same amount at night, that is, about 7 hours 30 minutes.

Commuting, as well, has a negative impact on sleep. U.S. researchers were recently surprised to find that some Americans are cutting into their sleep time—not to spend time with family, for leisure activities or even to watch TV—but in order to manage their daily commute.[12,13]

For Canadians, there is no question that long commuters sleep less than others. People with long commutes of an hour or more per day reported that their sleep lasted about 7 hours and 41 minutes. People with short commutes (1 to 30 minutes) slept on average 22 minutes more. Once again, men tended to sleep less than women.

Family and sleep

On the whole, married Canadians (including common-law) sleep less than the unmarried. Specifically, people living with a partner slept about 8 hours 5 minutes a night; single people (never married) slept 8 hours 29 minutes a night, or 24 minutes more; while widowed Canadians slept about 17 minutes more; those separated/divorced slept

about the same as those living with a partner.

Men living with a partner slept 7 hours 58 minutes, 15 minutes less than their women counterparts. There were no differences between the sexes among the unmarried.

Kids deprive parents of sleep

It is an age old truth that kids can deprive their parents of sleep, so raising kids explains why some Canadians sleep less than others. In 2004, data from the U.S. reports that Americans with children under age 11 slept for about 6 hours and 48 minutes a night, slightly less than the 7 hours reported for the population as a whole.[14] This phenomenon is similar to the one we find in Canada with the 2005 GSS.

Canadians with no children in the household got, on average, 8 hours 18 minutes of sleep. In households with children under the age of 15, parents slept less. And the more children they had, the less sleep they got. Those with at least two children slept 25 minutes less, while parents with only one child slept 17 minutes less.

There was no statistically significant difference in the average amount of sleep mothers and fathers got in households with children. However, when there were no younger children under 15 in the family, men did sleep about 12 minutes less than women, at 8 hours 11 minutes versus 8 hours 23 minutes.

In a similar way, when mothers and fathers spend more time caring for children under 15, they both get less sleep and the gender gap closes. Specifically, when men gave up to 90 minutes of care, they slept less than their female counterparts. When men and women both spent over 90 minutes caring for their children, there was no difference between how much fathers and mothers slept. So, the gender gap closes as men and women spend more time taking care of young children (Chart 2).

Dual-parent families with children under 15 years old slept 16 minutes less than those without children. This is not surprising since families with children generally have busier schedules that prolong the day and may shorten the time parents have available for sleep. However, the sleep times of unmarried Canadians were the same, whether or not there were younger children in the household.

Being stressed for time affects sleep

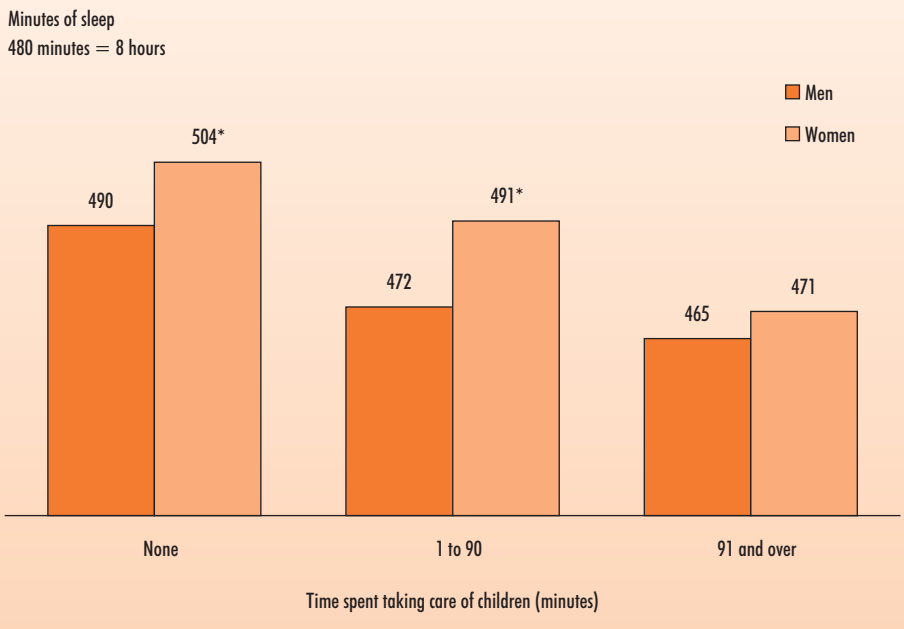
As common sense would suggest, the GSS finds that people who sleep less are the ones who feel really pressed for time in their daily lives (see "What you should know about this study" for definitions). Canadians who reported feeling highly time-crunched slept almost half an hour less than people who indicated they have a low level of time stress.

Time stress reduces the amount of sleep everyone gets: men who are highly time crunched get 35 minutes less than those who report little time stress; similarly, women get 25 minutes less sleep. On the whole, men still sleep fewer minutes per night than women, regardless of their time stress level.

When we break down the components of the time crunch scale, results for several of the component questions are significant. People who reported that they are workaholics, not surprisingly, sleep about 21 minutes less than non-workaholics, at 7 hours 57 minutes versus 8 hours 18 minutes. This translates into about 130 hours, or almost 5.5 days less per year. Respondents to two other questions—feeling trapped in your daily routine and feeling constantly under stress to accomplish things during the day—reported very similar results to the workaholics.

Almost half of Canadians say they cut back on their sleep when they need more time. They also sleep less—by about 12 minutes—relative to those who do not sacrifice their sleep in an attempt to accomplish more during the day. This finding is similar to results reported for 1998 and 1992.[15]

CST Chart 2 More time taking care of children reduces the gender sleep gap



* Statistically significant difference from men at $p<0.05$.
Source: Statistics Canada, General Social Survey, 2005.

CST What you should know about this study

This article is based on data collected by Statistics Canada's 2005 General Social Survey (GSS). The GSS is an annual survey that monitors changes and emerging trends in Canadian society. For the fourth time in Canada, the GSS has collected national level time use data.

The 2005 GSS asked respondents aged 15 and over living in private households in the 10 provinces to complete a time use diary. Data were collected for over 19,500 respondents representing 26.1 million Canadians. The diary provides a detailed record of the time spent on all activities in which respondents participated on the diary day, including sleep time. Respondents were asked to record the time they fell asleep the evening of the diary day and the time at which they woke up the next morning.

In addition to the time use diary, the 2005 questionnaire covers perceptions of time stress, sleep, social networks, transportation, and cultural and sports activities.

The study selected Canadians who reported being asleep at 4:00 o'clock in the morning after the diary day. Respondents who were not asleep at this time are excluded (4.3%), since no sleep duration data was recorded for them. These people account for approximately 10% of the sample size. Supplementary analysis using other sleep information from the survey shows this exclusion has no effect on estimates.

Time stress: The GSS asked a series of questions about time stress. By grouping people by the number of yes and no responses, it is possible to look at the sleep levels of low, medium and highly stressed Canadians. People were categorized as having low time stress if they answered yes to 0 to 2 questions, having a medium level of stress if they answered 3 to 5, and a high level of stress if they answered 6 to 10.

Employment: Full-time employment refers to working 30 or more hours a week. Part-time work refers to working less than 30 hours a week. Employment definitions do not include students.

Married: Includes people who are married and those who are living in a common-law relationship.

The unmarried: People who are widowed, separated/divorced or single (never married).

Child care: Includes all activities performed to take care of children, such as getting them ready for school, teaching them, and putting them to bed.

Exercise: Includes yoga, weight lifting and related activities.

Exercise affects how much women sleep

Exercise is a way to relieve stress accumulated during the day. Experts suggest that exercise can improve the body's ability to sleep, as long as it is done more than three hours before bed time.[16] But interestingly, the GSS results for men show no statistically significant difference in sleep times between those who exercised and those who did not: both groups sleep for just over 8 hours a night. However, their quality of sleep does change significantly: the men who exercised had fewer problems sleeping.

Exercise did influence women's sleep times. Women who exercised slept 19 minutes less than those who did not. This result is somewhat curious since we would expect exercise to lengthen the sleep period, but the explanation is quite simple.

According to the GSS sleep diaries, women who exercised got up earlier in the morning. Perhaps they wake up early to go to the gym or to jog around the neighbourhood. Getting the exercise rather than the sleep may have been worth it since fewer of these women reported they had trouble falling asleep or staying asleep, at 29% compared to 35% of women who did not exercise.

Summary

The amount of sleep we get is important for our health and our ability to interact and be sociable with others. With today's hectic lifestyles, it can be hard to find the time for basic activities—even sleep.

Sleep needs differ from person to person, depending on their unique physiological requirements, so it is impossible to state that any one number is the "right amount of sleep." But, comparing work and family characteristics can pinpoint whether certain groups in Canada are getting more or less sleep than others.

Single (never married) and widowed Canadians had the highest average levels of sleep compared to people living with a partner and those separated or divorced. Compared to Canadians with no children, those with 2 or more children averaged 25 minutes less of sleep.

Working longer hours was associated with sleeping less, as was higher levels of income. In fact, making over $60,000 per year was

CST Snooze button used more on the weekend

It is common knowledge that many people use the weekend to catch up on sleep they don't get during work nights. In a Canadian study that analyzed how workers spend their weekend, results showed that the majority of full-time employed Canadians sleep in on the weekend.[1]

For work weeknights (Sunday through Thursday), the average amount of sleep hovered around the 8 hour 6 minute mark. But when the weekend comes around, we tend to sleep an additional 19 minutes or more. Although men slept 13 minutes less than women on work nights, there is no difference between the sexes during the weekend.

Most people have slept in on the weekend at one time or another. For many, it is a weekly ritual. On Sunday morning, Canadians slept in almost an hour later to 7:50 a.m., compared to the average wake up time for work nights, 6:54 a.m.

Overall, men and women both tended to go to bed at about the same time, (10:56 p.m. for men and 10:55 p.m. for women). Since men slept 11 minutes less on average, they woke up 10 minutes earlier than women. This difference exists for men and women living with a partner, though not for unmarried Canadians.

1. Silver, C., & Crompton, S. (2002). No time to relax? How full-time workers spend the weekend. *Canadian Social Trends, 65*(Summer), 20-25. Statistics Canada, Catalogue no. 11-008-XIE. Retrieved February 27, 2008, from http://www.statcan.ca/english/freepub/11-008-XIE/2002001/articles/6198.pdf.

	Both sexes	Men	Women
	Wake up times in Canada (a.m.)		
Average	7:08	7:03	7:13*
Day of week			
Monday to Friday †	6:54	6:49	7:00*
Saturday	7:33[a]	7:33[a]	7:34[a]
Sunday	7:50[a]	7:46[a]	7:54[a]
Marital status			
Married (includes common-law) †	6:53	6:44	7:01*
Widowed	7:05[a]	6:48	7:08
Separated or divorced	6:59	6:57	7:01
Single (never married)	7:48[a]	7:49[a]	7:46[a]

† Reference group.
* Statistically significant difference from men at $p<0.05$.
[a] Statistically significant difference from the reference group at $p<0.05$.
Source: Statistics Canada, General Social Survey, 2005.

associated with sleeping 40 minutes less than people who made less than $20,000. For workers, commutes over 60 minutes cut sleep back by about 22 minutes on average, compared to workers with shorter commutes of 1 to 30 minutes.

One key demographic difference is between men and women. In 2005, men slept 8 hours and 7 minutes, 11 minutes less than women. Although women sleep more than men, they reported a higher rate of trouble falling asleep or staying asleep.

The gender sleep difference disappears for people who care for children over 90 minutes a day, for unmarried Canadians, for part-time workers and people not in the labour force, and for the weekend nights of Friday and Saturday.

The gender gap remains for men and women that fall into the following groups: work full-time; have no children living in the household; and, live with a partner.

Matt Hurst is a senior analyst with *Canadian Social Trends*, Social and Aboriginal Statistics Division, Statistics Canada.

1. Milne, C. (2007, October 26). Grouchy? Get some Zs. *The Globe and Mail*, p. L1.
2. Kinnon, S. R. (2006). Get Enough Sleep—or Else! *Readers Digest, May*. Retrieved November 21, 2007, from http://www.readersdigest.ca/mag/2006/05/sleep.php
3. National Sleep Foundation. *Myths – And Facts – About Sleep*. Retrieved January 8, 2008, from http://www.sleepfoundation.org/site/c.hulXKjM0IxF/b.2419251/k.2773/Myths and Facts About Sleep.htm
4. Williams, C. (2001). You snooze, you lose?—Sleep patterns in Canada. *Canadian Social Trends, 60*(Spring), 10-14. Statistics Canada, Catalogue no. 11-008-XIE. Retrieved February 27, 2008, from http://www.statcan.ca/english/freepub/11-008-XIE/2000004/articles/5558.pdf
5. Hale, L. (2007). Epidemiology of sleep. In J. F. Pagel & S. R. Pandi-Perumal (Eds.), *Primary Care Sleep Medicine: A Practical Guide* (pp. 14-23). Totowa, NJ: Humana Press.
6. Kronholm, E., Härma, M., Hublin, C., Aro, A. R., & Partonen, T. (2006). Self-reported sleep duration in Finnish general population. *Journal of Sleep Research, 15*(4), 276-290.
7. Shen, J., Botly, L. C. P., Chung, S. A., Gibbs, A. L., Sabanadzovic, S., & Shapiro, C. M. (2006). Fatigue and shift work. *Journal of Sleep Research, 2006*(15), 1-5.
8. Shields, M. (2002). Shift work and health. *Health Reports, 13*(4), 11-33. Statistics Canada, Catalogue no. 82-003-XIE. Retrieved February 27, 2008, from http://www.statcan.ca/english/studies/82-003/archive/2002/13-4-a.pdf
9. Shields, M. (2002).

10. Shields, M. (2002), p. 11.

11. Williams, C. (2002). Time or money? How high and low income Canadians spend their time. *Canadian Social Trends, 65*(Summer), 7-11. Statistics Canada, Catalogue no. 11-008-XIE. Retrieved February 27, 2008, from http://www.statcan.ca/english/freepub/11-008-XIE/2002001/articles/6195.pdf

12. "Research by David Dinges, Chief of Sleep and Chronobiology at the University of Pennsylvania School of Medicine...."

13. Harper, T. (2007, December 8). Think you have it bad? Try a 240-km commute. *The Toronto Star*, p. A1.

14. National Sleep Foundation. (2004). *National Sleep Foundation 2004 Sleep in America Poll Highlights*. Retrieved January 8, 2008, from http://www.sleepfoundation.org/site/c.huIXKjM0IxF/b.2427941/k.6405/National_Sleep_Foundation_2004_Sleep_in_America_Poll_Highlights.htm

15. Williams, C. (2001).

16. The Mayo Clinic. (2007). *10 Tips for Better Sleep*. Retrieved January 19, 2008, from http://www.mayoclinic.com/health/sleep/HQ01387

CST Census snapshot – Immigration in Canada: A portrait of the foreign-born population, 2006 Census

As part of its contribution to dissemination of Census findings, Canadian Social Trends *is highlighting some of the key social trends observed in the* 2006 *Census of Population. In this issue, we present a brief adaptation of* Immigration in Canada: A Portrait of the Foreign-born Population, 2006 Census (*Catalogue no.* 97-557).

Immigration: Driver of population growth

New data from the 2006 Census show that the proportion of Canada's population who were born outside the country reached its highest level in 75 years. The census enumerated 6,186,950 foreign-born in Canada in 2006. They represented virtually one in five (19.8%) of the total population, the highest proportion since 1931.

Overall, Canada's total population increased by 1.6 million between 2001 and 2006, a growth rate of 5.4%. Newcomers who arrived in the country between January 1, 2001 and May 16, 2006 were responsible for 69.3% of this population growth.

Immigrants came from many countries

Among the more than 1.1 million recent immigrants who arrived between 2001 and 2006, 58.3% were born in Asian countries, including the Middle East.

Fully 14% of recent immigrants who arrived between 2001 and 2006 came from the People's Republic of China (PRC). The PRC was followed by India (11.6% of new immigrants), the Philippines (7%) and Pakistan (5.2%), just as in 2001. In addition, South Korea accounted for 3.2% of newcomers and Iran for 2.5%.

Immigrants from Europe accounted for 16.1% of recent immigrants, with the two most common source countries being Romania and the United Kingdom. Formerly, most European newcomers came from the United Kingdom, Italy, Germany, the Netherlands and Portugal.

Recent immigrants from Central and South America and the Caribbean accounted for 10.8% of all newcomers, up slightly from 8.9% in 2001. Colombia and Mexico were the two leading source countries of recent immigrants from that region. As well, there was a slight increase in the share of recent immigrants from Africa – nearly 10.6% compared with less than 10% in earlier years.

Linguistic diversity of the immigrant population

In 2006, nearly 150 languages were reported as a mother tongue among the foreign-born population. (Mother tongue is defined as the first language a person has learned at home in childhood and still understands at the time of the census.)

The 2006 Census showed that 70.2% of the foreign-born population had a mother tongue other than English or French, up from 67.5% in 2001. The linguistic profile of these immigrants reflected the leading source countries of immigrants to Canada from different waves.

Of the foreign-born who reported mother tongue(s) other than English or French, the largest proportion (18.6%) reported Chinese, including the various dialects, such as Cantonese and Mandarin. It was followed by Italian (6.6%), Punjabi (5.9%), Spanish (5.8%), German (5.4%), Tagalog (4.8%) and Arabic (4.7%).

Top 10 country of birth of recent immigrants, 1981 to 2006

Rank	2006 Census	2001 Census	1996 Census	1991 Census	1981 Census
1	People's Republic of China	People's Republic of China	Hong Kong	Hong Kong	United Kingdom
2	India	India	People's Republic of China	Poland	Viet Nam
3	Philippines	Philippines	India	People's Republic of China	United States
4	Pakistan	Pakistan	Philippines	India	India
5	United States	Hong Kong	Sri Lanka	Philippines	Philippines
6	South Korea	Iran	Poland	United Kingdom	Jamaica
7	Romania	Taiwan	Taiwan	Viet Nam	Hong Kong
8	Iran	United States	Viet Nam	United States	Portugal
9	United Kingdom	South Korea	United States	Lebanon	Taiwan
10	Colombia	Sri Lanka	United Kingdom	Portugal	People's Republic of China

Note: "Recent immigrants" refers to landed immigrants who arrived in Canada within five years prior to a given census.
Source: Statistics Canada, Census of Population, 2006.

CST Census snapshot – Immigration in Canada: A portrait of the foreign-born population, 2006 Census – continued

Most immigrants reported knowledge of English and/or French

The overwhelming majority of newcomers (90.7%) reported that they could converse in English and/or French. Furthermore, use of English and/or French increased as immigrants lived in Canada longer. Among the foreign-born population who came before 1961 and had a mother tongue other than English or French, a majority (70.2%) reported speaking an official language most often at home in 2006. In contrast, the majority (74.4%) of newcomers who did not have English or French mother tongue spoke a non-official language most often at home.

Higher proportion of recent immigrants in the younger age groups

People tend to migrate while they are young. As a result, the immigrants who arrived in Canada since 2001 were over-represented in the younger age brackets.

In 2006, 57.3% of recent immigrants were in the prime-working age group of 25 to 54, compared with only 42.3% of the Canadian-born population. Together, recent immigrants to Canada accounted for 3.9% of the population in this age group.

Children aged 14 and under accounted for one in five recent immigrants to Canada, and youth aged 15 to 24 for 15.1%. Both these proportions are similar to those of the Canadian-born population.

At the other end of the age spectrum, only 3.4% of immigrants who came to Canada in the period 2001-2006 were aged 65 and over, versus 11.5% of the Canadian-born.

Immigrants in the provinces and territories

Ontario, Quebec and British Columbia received 85.8% of the newcomers who arrived in Canada between 2001 and 2006. Ontario took in 52.3% of the recent immigrants, British Columbia 16% and Quebec 17.5% of recent immigrants.

The Atlantic region attracted a slightly larger share of recent immigrants who came to Canada between 2001 and 2006. During this period, an estimated 13,500 recent immigrants settled in the Atlantic region, or 1.2% of the 1.1 million newcomers who arrived in Canada in the last five years. During the previous five-year period of 1996 and 2001, 1% of newcomers settled in Atlantic Canada.

The United States was the top source country of newcomers to Nova Scotia, New Brunswick and Prince Edward Island. The United Kingdom was the top source country for Newfoundland and Labrador.

The 2006 Census enumerated a total of 851,600 foreign-born residents in Quebec, an increase of 20.5% from 2001. This was higher than the 13.6% growth rate in the foreign-born population for the entire country during this period.

People born outside Canada accounted for 11.5% of Quebec's total population in 2006, the highest proportion ever in the province's history. Most of Quebec's foreign-born chose to live in the CMA of Montréal (86.9%). It was followed by the CMA of Québec (3.1%), the Quebec portion of Ottawa Gatineau (2.7%) and Sherbrooke (1.2%).

Ontario continued to be the province of choice for more than half (52.3%) of the 1.1 million newcomers who arrived in Canada during the past five years. In total, the census enumerated 3,398,700 foreign-born individuals, who represented 28.3% of the province's population, the highest proportion in Ontario's history.

Most foreign-born Ontario residents lived in the CMA of Toronto (68.3%). Significant proportions of the province's foreign-born population also lived in the Ontario part of Ottawa - Gatineau (5.3%), Hamilton (4.9%), Kitchener (3%), London (2.6%) and Windsor (2.2%).

A growing share of recent immigrants chose to settle in both Alberta and Manitoba during the past five years. About 9.3%, or 103,700, of the new immigrants who came to Canada settled in Alberta.

Similarly, an estimated 31,200 newcomers settled in Manitoba, about 2.8% of the total recent immigrants. The situation in Saskatchewan was relatively unchanged from the last census.

About 16%, or 177,800, of the 1.1 million newest immigrants who came to Canada during the past five years settled in British Columbia. They accounted for 27.5% of the province's population, up from 26.1% in 2001.

Only about 1,000 newcomers, about 0.1% of all recent immigrants entering Canada, chose to settle in the territories. The Philippines was the leading source country, accounting for 24.5% of these recent arrivals.

Distribution of population by immigrant status and place of residence, 2006

Place of residence	Population			Ratio of recent immigrants to total population[3]
	Total	Total immigrants[1]	Recent immigrants[2]	
Canada	**100.0**	**100.0**	**100.0**	**...**
Newfoundland and Labrador	1.6	0.1	0.1	0.1
Prince Edward Island	0.4	0.1	0.1	0.2
Nova Scotia	2.9	0.7	0.6	0.2
New Brunswick	2.3	0.4	0.4	0.2
Québec	23.8	13.8	17.5	0.7
Ontario	38.5	54.9	52.3	1.4
Manitoba	3.6	2.4	2.8	0.8
Saskatchewan	3.1	0.8	0.7	0.2
Alberta	10.4	8.5	9.3	0.9
British Columbia	13.0	18.1	16.0	1.2
Yukon Territory	0.1	0.0	0.0	0.4
Northwest Territories	0.1	0.0	0.1	0.4
Nunavut	0.1	0.0	0.0	0.1

... not applicable

1. "Immigrant population", also known as "foreign-born population", is defined in the 2006 Census as persons who are, or have been, landed immigrants in Canada.
2. "Recent immigrants" refer to immigrants who came to Canada between January 1, 2001 and May 16, 2006.
3. This ratio shows whether the share of recent immigrants in a given location is higher than the share of the total population in the same location. For example, if 5% of recent immigrants live in a place and the same percentage (5%) of the total population also lives there, then the ratio will be 1.0.

Source: Statistics Canada, Census of Population, 2006.

Vast majority of immigrants chose city life

Unlike immigrants who arrived years ago in search of good farmland to till, today's immigrants are mostly urban dwellers. In fact, they are much more likely to live in a metropolitan area than the Canadian-born population.

In 2006, 94.9% of Canada's foreign-born population and 97.2% of recent immigrants lived in either a census metropolitan area or a census agglomeration, i.e., urban community. This compares with 77.5% of the Canadian-born population.

Canada's three largest CMAs — Toronto, Montréal and Vancouver — were home to 3,891,800 foreign-born people in 2006, or 62.9% of Canada's total foreign-born population. In contrast, these three urban areas were home to slightly more than one-quarter (27.1%) of the Canadian-born population.

Toronto and Vancouver led major cities in Australia and the United States in terms of the proportion of their population born outside the country. Toronto's and Vancouver's closest competitors were Miami (36.5% of the city's population was foreign-born) and Los Angeles (34.7%).

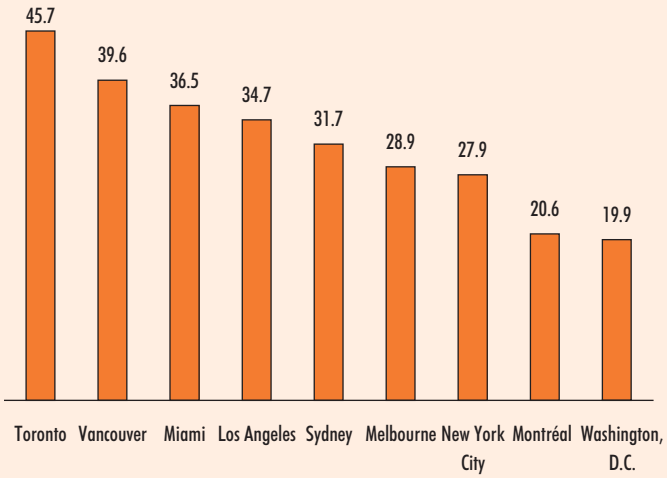
Three largest centres attracted 7 out of every 10 newcomers

Toronto, Montréal and Vancouver attracted 68.9% (765,000) of the new immigrants who came between 2001 and 2006. Another 28.3% spread across the remaining urban areas, while only 2.8% chose to live in a rural area.

Toronto's share of the total recent immigrants was about 40.4%, a decline from 43.1% in 2001;Vancouver's share decreased from 17.6% to 13.7%; while Montréal rose from third to second most popular destination, attracting 14.9% of recent immigrants in 2006, compared with 11.9% in 2001.

The reasons newcomers choose to settle in Canada's three largest CMAs vary, according to the Longitudinal Survey of Immigrants to Canada, but the most common reason was to join the social support networks of family and friends. Other reasons included job prospects (Toronto), language (Montreal), and climate (Vancouver).

Percentage of foreign born in the total metropolitan population, 2006



Note: United States data is for 2005.

Sources: Statistics Canada, 2006 Census; Australian Bureau of Statistics, 2006 Census; U.S. Census Bureau, 2005 American Community Survey.

As the proportion of new immigrants who have settled in Toronto and Vancouver has declined over time, an increasing share of newcomers chooses to live in other CMAs.

Calgary ranked fourth in 2006 in its share of recent immigrants. About 57,900 newcomers, or 5.2% of individuals who arrived in Canada in the last five years, settled in Calgary, an increase from 3.8% in 2001.

Gains were also recorded in Edmonton, which received 2.9% of all newcomers between 2001 and 2006, Winnipeg (2.2%) and London (1.2%).

Hamilton's share of newcomers remained unchanged at 1.9%, while Ottawa – Gatineau showed a slight decline to 3.2%.

Newcomers in suburbs

The impact of immigration on the three largest CMAs varied because the newcomers were more likely to live in certain municipalities within these metropolitan areas.

In Toronto, newcomers to Canada were largely responsible for the growth in the municipalities surrounding the City of Toronto. For example, Mississauga took in 16.7% of newcomers to the Toronto CMA, Brampton 9.6% and Vaughan 2.5%.

In Vancouver, 46% of the CMA's recent immigrants lived in the three municipalities of Richmond, Burnaby and Surrey. Only 28.7% of newcomers lived in the central municipality of the City of Vancouver.

In Montréal, 76.3% of the newcomers lived in the City of Montréal. But there was an increase in the number of newcomers settling in surrounding municipalities such as Laval, Longueuil, Brossard, Dollard-des-Ormeaux and Côte-Saint-Luc. Collectively, these surrounding municipalities received 15% of newcomers in 2006, compared with 11.2% in 2001.

Most immigrants held Canadian citizenship

To be eligible for Canadian citizenship, immigrants must meet several requirements, including at least three years of residency in Canada and knowledge of an official language. They may also be required to take a knowledge test.

In 2006, 85.1% of eligible foreign-born people were Canadian citizens, a slight increase from 83.9% in 2001.

Those who had been in Canada the longest were the most likely to hold Canadian citizenship. The vast majority of those who arrived before 1961 (94.1%) or in the 1960s and 1970s (89.1%) had become naturalized citizens. The proportion of naturalized citizens was lower (84.1%) among those who arrived in the 1990s.

Since 1977, immigrants who obtain Canadian citizenship also have the right to retain their previous citizenship. However, in 2006, just 2.8% of the population, about 863,100 people, reported having Canadian citizenship in addition to other citizenship.

Most (80.2%) of those who had multiple citizenship were foreign-born people, with the largest proportion reporting citizenship of the United Kingdom (14.7%), Poland (6.6%) and the United States of America (5.4%).

Portraits of major metropolitan centres

Settlement patterns show that immigrants choose to live in major urban centres to take advantage of the established immigrant communities, economic opportunities and social ties. As a result, recent immigrants have contributed to the changing portraits of urban communities.

Halifax: Largest foreign-born population in Atlantic provinces

Halifax was home to the largest foreign-born population in the Atlantic provinces. The 2006 Census counted 27,400 foreign-born people living in the census metropolitan area of Halifax, and they represented 60.7% of all Nova Scotians born outside Canada.

Halifax received 5,100 new immigrants, or 0.5% of all newcomers to Canada in 2006, who made up 18.4% of the foreign-born population in the CMA. Slightly more than half (51.4%) were born in Asia and the Middle East.

Montréal: The third-largest foreign-born population

Montréal was home to the third-largest foreign-born population in Canada, having 740,400 foreign-born residents who accounted for 12% of the country's total foreign-born population.

Of the 1.1 million recent immigrants to Canada, 14.9% chose to settle in Montréal. In fact, Montréal's share of recent immigration to Canada is greater than its share of Canada's total population (11.5%).

About two-thirds (64.6%) of newcomers were aged 25 to 54, compared with 43.3% of its Canadian-born residents. Recent immigrants made up 6.5% of the working-age population in Montréal.

New immigrants who settle in the Montréal CMA come from every part of the world, especially francophone countries. Asia, including the Middle East, was the leading source of recent immigrants, as 31% of the new immigrants living in Montréal were from that part of the world.

Montréal CMA was home to 60% of all newcomers to Canada who reported French as their only mother tongue. Moreover, six of the 10 leading birthplaces of new immigrants to Montréal are countries where French is spoken: Algeria (8.7%), Morocco (7.6%), Romania (7.2%), France (6.3%), Haiti (5.2%) and Lebanon (3.2%).

More African-born recent immigrants settled in Montréal than in other CMAs, at 37% compared with 22.1% in Toronto and 4.1% in Vancouver. African immigrants made up 26% of Montréal's newcomers, which made Africa the second-largest source of recent immigration to Montréal.

There are still European immigrants in Montréal, representing 22.5% of Montréal's total recent immigrant population in 2006. France was still a major country of birth among immigrants to Montréal (more than 10,400 newcomers) although increasing numbers of recent immigrants are from East European countries such as Romania (12,000) and Bulgaria (2,900).

In 2006, one in five newcomers were born in the Americas, most from Haiti, Colombia, Mexico and the United States.

In 2006, 76.3%, or 126,200 individuals, of recent immigrants to the CMA of Montréal were living in the City of Montréal.

While 75.2% of the recent immigrants had a mother tongue other than English or French, 94.4% reported that they were able to carry on a conversation in English or French.

Ottawa - Gatineau: Fifth-largest proportion of foreign-born

The 2006 Census enumerated 202,700 foreign-born people in the census metropolitan area (CMA) of Ottawa - Gatineau, an increase from 185,100 in 2001 and a growth rate of 9.5%.

Since 2001, 35,100 recent immigrants had arrived in Ottawa-Gatineau, representing 3.1% of the total population in the CMA. The Quebec part of the CMA (Gatineau) received 15.2% (representing 5,300 individuals) of new immigrants who came within the last five years. Conversely, on the Ontario side of the CMA (Ottawa), the share of new immigrants dropped from 90.1% of all newcomers in 2001 to 84.8% in 2006.

Ottawa - Gatineau ranked fifth in having the largest proportion of foreign-born people (3.3%) and new immigrants (3.2%) in 2006. The People's Republic of China (12.7%), India (4.6%) and the United States (4.3%) were the top three countries of birth among the new immigrants in Ottawa - Gatineau.

Toronto: Canada's major immigrant gateway

The census metropolitan area (CMA) of Toronto is still the major gateway for immigrants in Canada. The census enumerated 2,320,200 foreign-born people in Toronto in 2006, the largest number of any metropolitan area in the nation.

The foreign-born population accounted for 45.7% of the CMA's total population of 5,072,100, up from 43.7% in 2001. Between 2001 and 2006, the foreign-born population grew by 14.1%, compared to 4.6% for the Canadian-born population.

More foreign-born people settled in the Toronto CMA between 2001 and 2006 than in any other metropolitan area.

CST Census snapshot – Immigration in Canada: A portrait of the foreign-born population, 2006 Census – continued

An estimated 447,900, or 40.4% of foreign-born people who arrived in Canada between 2001 and 2006, chose Toronto. These new immigrants made up 8.8% of Toronto's total population in 2006.

The top two source countries for recent immigrants to Toronto were Asian, with India surpassing the People's Republic of China as the number one source country.

The new arrivals had a major impact on the metropolitan area's workforce. Over one-half (56.6%) were in their prime working years, aged 25 to 54, and they made up 10.8% of CMA residents in this age group.

Of school-aged children between ages 5 and 16, recent immigrants made up 10.5%. Among these school-aged children, 54.9% reported speaking a non-official language most often at home.

The City of Toronto was home to the largest number of foreign-born people in 2006. However, most of the growth in the foreign-born population occurred in the municipalities surrounding the city.

For example, Brampton's foreign-born population increased by 59.5% from 2001 to 2006, and Markham's by 34.1%. Ajax, Aurora and Vaughan also saw increases of more than 40% in the foreign-born population

More than 1 million foreign-born in the city of Toronto

An estimated 267,900 recent immigrants settled in the City of Toronto, accounting for 21.6% of the total foreign-born population living in the city in 2006.

More than two-thirds (68.5%) of newcomers were born in Asian countries, with the top five source countries being the People's Republic of China, India, the Philippines, Pakistan and Sri Lanka.

Chinese, including the different dialects, such as Mandarin and Cantonese, was reported by 17.3% of newcomers as the language most often spoken at home. Another 4.8% of newcomers spoke Urdu most often at home.

Among the newcomers in the City of Toronto, about 1 in 10 reported that they did not have knowledge of either English or French.

In 2006, 56.5% of the population in Markham was foreign-born. A total of 18,900 newcomers chose to live in Markham, and represented 7.2% residents of the 2006 population. The vast majority (84.3%) of newcomers were born in Asia and the Middle East. Fully 8% of school-aged children 5 to 16 years in Markham were recent immigrants to Canada. About one-quarter of them reported Chinese as the language spoken most often at home.

In Mississauga, the proportion of the foreign-born population increased from 46.8% in 2001 to 51.6% in 2006. The top five countries of birth of recent immigrants there were India, Pakistan, the Philippines, the People's Republic of China and South Korea. This pattern of migration is reflected in the diversity of the communities in Mississauga.

Between 2001 and 2006, a total of 42,900 immigrants settled in Brampton, making the municipality home to 9.6% of all newcomers to the Toronto metropolitan area. Two-thirds of all recent immigrants there came from just three countries: India, Pakistan and the Philippines. Jamaica and Nigeria were also among the top source countries for newcomers to Brampton. About 3 in 10 said that they spoke Punjabi most often at home. The use of Punjabi reflects the high number of recent immigrants from India and Pakistan who settled in Brampton.

Hamilton: Almost one in four foreign-born

Following Toronto and Vancouver CMAs, Hamilton's foreign-born population of 24.4% was the third highest in 2006 in Canada. This was up from 23.6% in 2001.

Between 2001 and 2006, the foreign-born population increased by 7.7%, while the total population of the Hamilton CMA grew by 4.3%.

The share of Canada's recent immigrants who settled in Hamilton has remained unchanged since 2001 at 1.9%. Hamilton was home to 20,800 immigrants who arrived in Canada between 2001 and 2006. One-half of them were born in Asia and the Middle East, while 23% were from Europe.

Winnipeg: Philippines the number one source country of recent immigrants

The foreign-born population in Winnipeg grew by 10.5% between 2001 and 2006. As of 2006, the foreign-born population numbered 121,300, or 17.7% of the total population for the CMA.

About 1 in 5 foreign-born residents of Winnipeg were recent immigrants, predominantly born in Asia and the Middle East. The Philippines was the leading source country,

with nearly 3 out of every 10 newcomers, while India and the People's Republic of China were also among the leading source countries of recent immigrants.

Edmonton: Attracted a larger share of newcomers in 2006

The foreign-born population in Edmonton grew by 14.9% between 2001 and 2006, outpacing the total growth of the CMA (10.6%) and the national growth rate of the foreign-born population (13.6%).

In total, the 2006 Census enumerated 31,900 newcomers, with almost all (92.6%) residing in the City of Edmonton. Almost two-thirds (62.1%) of recent immigrants were born in Asia and the Middle East. The Philippines (13.4% of newcomers), India (13%) and the People's Republic of China (12.2%) were the leading source countries.

Calgary: Foreign-born population growing faster than the Canadian-born population

Calgary has experienced high population growth in the last several years, and in 2006, there were an estimated 252,800 foreign-born residents in the CMA. With an increase of 28% between 2001 and 2006, growth in Calgary's foreign-born population was one of the fastest in the country.

An estimated 57,900 recent immigrants settled in Calgary, making up 5.4% of the city's total population in 2006. They had a significant impact on the local workforce, accounting for nearly two-thirds of the growth in the working-aged population (25 to 54 years old). Meanwhile, recent immigrant children made up 7.2% of all school-aged children in the CMA.

Recent immigrants living in Calgary came from all around the world, but the People's Republic of China, India and the Philippines were the top three source countries of recent immigrants. About two-thirds (63.5%) of newcomers spoke a non-official language most often at home.

Vancouver: Canada's immigrant gateway in the West

The population of foreign-born people in the CMA of Vancouver increased five times faster than its Canadian-born population between 2001 and 2006, at 12.6% and 2.3%, respectively.

The Census counted 831,300 foreign-born people in the Vancouver CMA, up about 92,700 from 2001. These residents accounted for 39.6% of the CMA's total population.

However, the number of recent immigrants who chose to settle in the census metropolitan area (CMA) of Vancouver has declined for two consecutive censuses, unlike Toronto and Montréal, which both recorded increases. The main factor in the decline was a slowdown in immigration from the Hong Kong Special Administrative Region, which had been the source of many newcomers in the late 1980s and early 1990s.

Most of the 151,700 immigrants who arrived in Vancouver during the past five years were born in Asia and the Middle East. Over one-quarter (26.2%) came from the People's Republic of China, and 12.4% from India, 10.9% from the Philippines, 7.7% from South Korea and 4.6% from Taiwan.

A high proportion of recent arrivals (57.2%) were in their prime working years, aged 25 to 54, and made up 8.9% of Vancouver's prime working-age population. In addition, about 27,600 children aged 5 to 16 were new to Canada. These young recent immigrants represented 9.3% of Vancouver's school-aged population.

City of Vancouver received the highest number of newcomers

Being the biggest municipality in the CMA of Vancouver, the City of Vancouver had the biggest population of both longer-term and recently arrived foreign-born people of all the municipalities in the metropolitan area.

The foreign-born accounted for 45.6%, or 260,800 persons, of the city's total population. About 7.6% of this population was made up of newcomers to Canada.

Between 2001 and 2006, the City of Vancouver's foreign-born population grew by 5.3%. People born in the People's Republic of China made up 36.1% of recent immigrants. The other leading source countries were the Philippines (12.2%), India (4.8%), Taiwan (4.2%) and South Korea (4%).

In the municipality of Richmond, foreign-born people outnumbered the Canadian-born, accounting for 57.4% of residents. In fact, Richmond had the highest proportion of foreign-born of all Canada's municipalities.

About 1 in 10 (10.8%) of Richmond's population were newcomers who had arrived in Canada within the last five years. Among these 18,800 recent immigrants, fully one-half were born in the People's Republic of China. Other prominent

source countries were the Philippines (14.2%), Taiwan (7.4%), the Hong Kong Special Administration Area (4.7%) and India (4.3%). Chinese dialects such as Mandarin and Cantonese were the languages spoken most often at home by the largest share of recent immigrants living in Richmond.

The immigration trend in the municipality of Burnaby was similar to that of its neighbour, Richmond. The 2006 Census counted 102,000 foreign-born residents in Burnaby, who accounted for 50.8% of its population.

About 1 in 10 (10.8%) of Burnaby's residents were newcomers who had arrived in Canada between 2001 and 2006. Collectively, 64.4% of all newcomers to Burnaby came from the People's Republic of China, South Korea, the Philippines, Taiwan and India.

In Surrey, 38.3% of the total population of 392,500 was foreign-born. Although this proportion was the lowest of the four big municipalities in the Vancouver CMA, Surrey actually recorded the highest growth rate for the foreign-born population, at 30.9%.

Overall, recent immigrants made up 7.4% of Surrey's total population. India was the top source country (41.9% of all foreign-born newcomers). Another 33.9% of recent immigrants came from the Philippines, South Korea, the People's Republic of China, Pakistan and Fiji.

Kids' sports

by Warren Clark

Sport touches many aspects of Canadians' lives—their health and well-being, their social networks, their sense of social connectedness. Organized sport can help children grow, giving them a sense of achievement while building teamwork, leadership, problem-solving, decision-making, and communications skills. Sport also enables children to channel their energy, competitiveness and aggression in socially beneficial ways.[1] Improving health through sport and other forms of physical activity may reduce future health-care costs and build lasting habits of physical fitness while combating the growing problem of childhood obesity.[2,3,4]

Most children are first introduced to sports through the family, which has an important influence on children as they develop their identity and build self-esteem. Many studies have identified the influence that parents have on their children's sports involvement by investing time, emotional support and financial resources.[5]

This article will examine trends in regular organized sports participation of children aged 5 to 14, using data from the General Social Surveys (GSS) of 1992 and 2005. It will also look at the factors that influence children's participation in sports including parental involvement in sports, socio-demographic characteristics of the family, and geography. Other physical activities (such as walking, jogging, dancing) may also contribute to the health and well-being of children, but these remain beyond the scope this article. Only those activities that are considered organized sports are discussed here (see "What you should know about this study" for a definition of the sports included in this article).

Sports participation is declining

In 2005, 51% of children aged 5 to 14 (2.0 million children[6]) regularly took part in sports during the previous 12 months. About 51% of these active children participated in more than one sport and were involved in sports activities on average about 2.6 times per week per sport during their sport's season.

Whereas boys' participation in organized sports has declined in all age groups, girls' participation trends depends on their age (Chart 1). In 2005, 5- to 10-year-old girls played organized sports at about the same rate as in 1992. In 2005, older girls aged 11 to 14 were less likely to play sports than they did in 1992, but the decline was less sharp than for boys the same age.[7]

According to the 2005 GSS, boys aged 5 to 14 are still more likely to participate in sports than girls the same age, but the gap is narrowing. Sports participation of boys has declined from 66% in 1992 to 56% in 2005. Over the same time period, sports participation of girls has changed little from 49% to 45%.

Not only are boys now less likely to regularly participate in sports than they were back in 1992, those who do compete are involved in fewer sports—an average of 1.8 sports versus 1.9. In contrast, girls who participate played the same average number of sports in 2005 as they did in 1992, at 1.7. However, the frequency of sports participation is similar for boys and girls, at 2.5 times per week for boys compared with 2.7 times per week for girls.

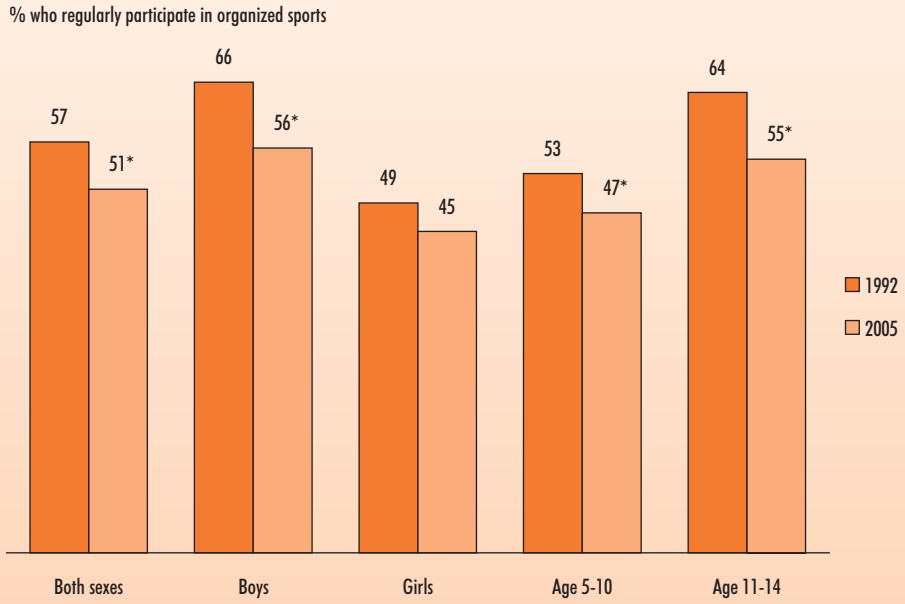
Household income and education of parents influence sports participation

In 2005, 51% of two-parent households with children spent money on sports and athletic equipment. Those who made such expenditures spent an average of $579 during the year.[8] In addition to these equipment expenses, families may also spend money on facility rentals, transportation to sports events, club memberships and competition entry fees in order to support their children's participation in sports.

In light of such costs, it is not surprising that sports participation is most prevalent among children from high-income households (highest adjusted income quintile) at 68%, and lowest among children from lower income households (lowest quintile), at 44% (Chart 2).[9] (See "What you should know about this study" for an explanation of adjusted household income quintiles). Interestingly, the participation gap between boys and girls narrows as household income rises, suggesting that girls from lower income families are particularly disadvantaged when it comes to involvement in sports.

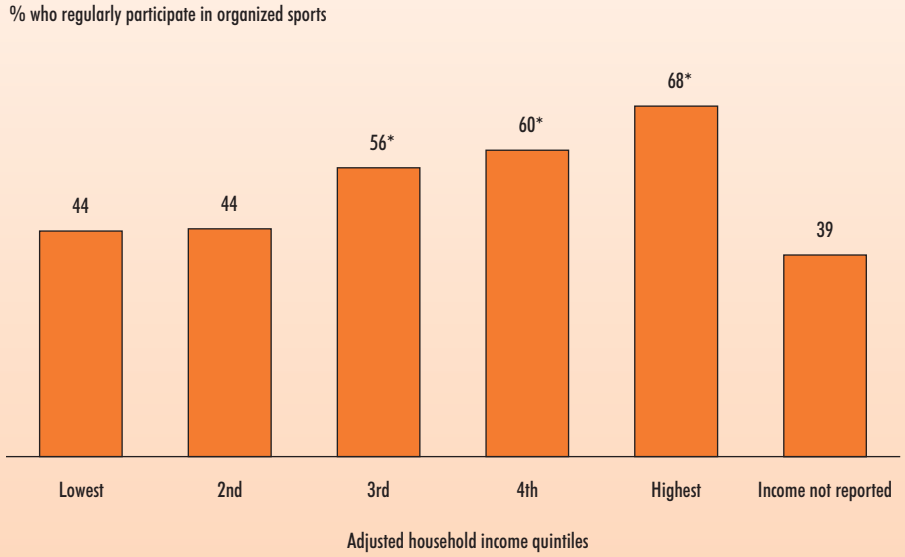
Parental education levels are closely linked to household income. Children who have a parent with a graduate or first professional university degree were more likely to play sports (60%) than children

CST Chart 1 Kids' sports participation has declined in recent years



* Sports participation rate is significantly different from rate for 1992 ($p<0.05$).
Source: Statistics Canada, General Social Survey, 1992 and 2005.

CST Chart 2 Sports participation is highest for children in high income families



Note: For definition of adjusted household income see "What you should know about this study."
* Sports participation rate is significantly different from rate for the lowest quintile ($p<0.05$).
Source: Statistics Canada, General Social Survey, 2005.

whose parents have a high school diploma (42%). Children of parents who have not graduated from high school are even less likely to be sports participants (22%). The relationship between parental level of education and sports participation of their children is linked to household income, as the children of university-educated parents are more likely to be in high-income households.

Sporty parents have sporty kids

Parents are often involved in their children's sports, whether it is on the sidelines shouting encouragement or being more formally involved as a coach, referee, organizer or fundraiser for a team, league or sports club. They also financially support their children's sports activities.

On an average day, about 7% of parents of 5 to 14-year-olds are involved in some form of sports activity with their children, whether it be participating in sports, coaching or attending a professional or amateur sporting event as a spectator. They spent an average of 2.5 hours doing these sports-related activities with their children.

Parents themselves are involved in many sports-related activities. In total, 57% of parents are involved in some way with sports as participants, spectators, coaches, referees, sports administrators, organizers or members of sports organizations. The remaining 43% are not involved in sports in any way.

According to the 2005 GSS, nearly half of parents (46%) watch amateur sporting events. They are often spectators of their own children's games. In this role, they are taking the time to encourage and be involved with their child's sports, even if it is just watching from the sidelines and driving them to and from the event.

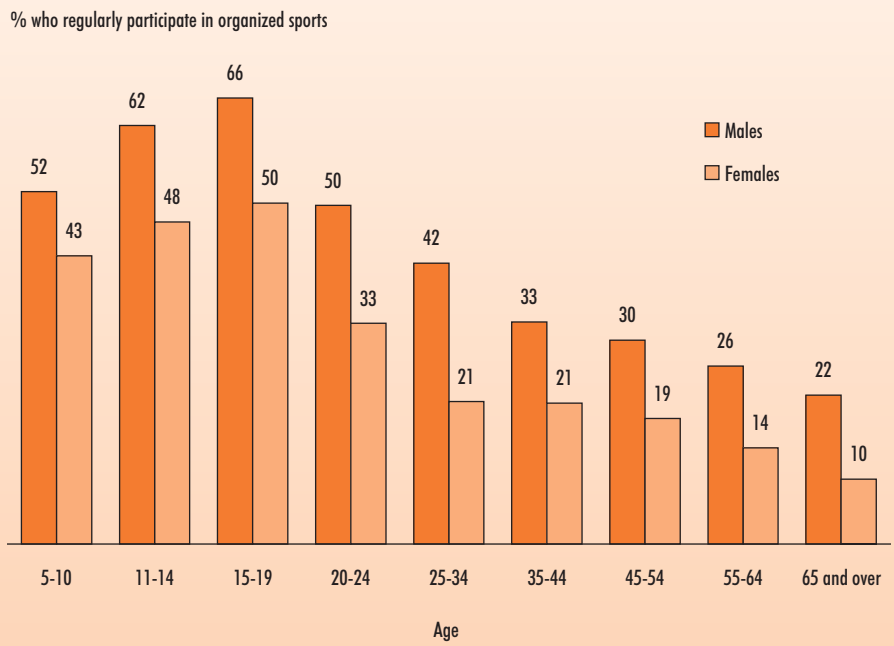
About one-quarter (26%) of parents regularly played sports themselves. Organized sports participation declines quickly after adults reach their early 20s (Chart 3); in fact, in 2005, 34% of fathers and 20% of mothers played sports. Some parents

were involved as coaches (8%), referees (2%) or sports administrators (11%), but fathers were twice as likely as mothers to be in these roles, at 20% versus 11%.

The level of parental involvement in sports has an impact on children's sports participation. In 2005, 24% of children participated in sports if their parents were not involved in sports in any way. It makes a big difference if parents are involved, even just as spectators of amateur sports: children's participation rates more than doubled (62%). This finding shows that parents can support their children's sports activity simply by watching and encouraging them.

Of those parents who play sports themselves, about half also watch amateur sports. Over two-thirds of children (69%) of these parents[10] also play sports. Sports participation is highest among children whose parents are involved in refereeing, coaching or in sports administration (82%).

CST Chart 3 Children and adolescents are most likely to participate in organized sports



Source: Statistics Canada, General Social Survey, 2005.

Family structure can affect participation

Family structure can also influence the sports participation of children, especially if there are two parents who can share the responsibility of facilitating their children's sports participation.[11] The highest children's sport participation rates (53%) occur in intact families where both birth parents are present.

However, children are more likely now than in the past to experience living in a lone-parent, step or blended family. A key finding of the GSS results is that boys' sports participation was almost the same for all family types (ranging from 54% to 58%).

In contrast, girls in lone-parent families (39%) are less likely to be sports participants than girls from intact families (48%). Lone-parent families, especially those headed by women, are more likely to experience financial difficulties. Under the strain of financial problems, lone parents may sacrifice the sports participation of their daughters, reasoning that sports have traditionally not been as important to young girls' identities as they are to young boys'.[12]

In two-parent families, children's sports participation is highest (75%) if both parents are involved in sports as sport participants themselves, as coaches, referees, sports administrators, as amateur sport spectators or as members of sports clubs or organizations. When only one of the parents is involved in sports, children's sports participation is lower (49%). Although fathers have traditionally been more likely to be involved in sports than mothers, children's participation tends to be about the same whether the father or mother is involved (50% if only the father, 48% if only the mother). If neither parent is involved, only 22% of children take part in sports.

In lone-parent families, parents are less likely to be involved in sports than parents in two-parent families, at 50% versus 59% respectively. If the lone parent is involved in sports, 69% of their children participate in sports compared with 27% if the lone parent is not involved in sports. These results reinforce research that shows the importance of the family in introducing children to sports early in life.[13]

Children whose mothers are under age 30 are also less likely to participate in sports than children with mothers in their 40s. This likely reflects lower levels of educational attainment and lower household incomes among younger mothers—two factors associated with the sports participation of children.

Parents' workforce status affects children's participation

Among two-parent families, children's sports participation is highest where the mother works part-time and the father works full-time (66%); it is slightly lower when both parents work full-time (58%), and lowest when the mother is not working (38%).

This finding reinforces the argument that children's sports participation entails the use of many family resources, including both

CST Parental attitudes to sport

- **No time for sports**

  Although money and access to sports facilities are positive factors associated with sports participation, parental apathy may be the biggest stumbling block. Parents who did not play sports themselves were asked about their reasons for not participating. Half said they have no time for sports, and one-quarter said that they have no interest in sports. Few cited a lack of sports facilities or money. We might expect that those who had no money to play sports themselves would also be limited in the way they could financially support their children's sports. Unfortunately, the small number of parents who reported this reason did not allow us to determine the impact of this upon their children's sports participation due to a small sample size. Not surprisingly, the children of parents with no interest in sports had lower rates of sports participation than those whose parents cited other reasons for not participating.
- **I'm keen about sports**

  Parents who regularly participate in sports were asked how strongly they felt about five different reasons for their own participation. They were most likely to view their own participation in sports as "very important" for recreation and relaxation (71%), as a way of maintaining physical health and fitness (67%), and as a family activity (60%). They were less likely to rate achievement and skill development (41%) and developing new friendships (27%) as very important reasons.

  The attitudes of fathers play a key role in the likelihood that their children play sports. Fathers who cited at least four out of the five reasons as "very important" exhibited a very positive attitude towards sports participation. This outlook is associated with significantly higher sports participation for their children (77%) compared with children whose fathers reported zero or one reason as very important for their own sports participation (54%).

  In contrast with fathers' attitudes, the level of importance mothers placed on their own sports participation made little difference to that of their children. Still, there is a significant difference when mothers participated in sports in any way: their children's participation rate was much higher (71%) than that of children whose mothers did not (29%).

money and time. Families where both parents are working full-time are more likely to be in the top household adjusted income quintile, but they may have less time to support their children's sports participation. In fact, in families where both parents work full-time, 58% of mothers and 61% of fathers are involved in sports in some way compared with 61% of mothers and 76% of fathers in families where the mother works part-time (Chart 4).

In families where the mother is not employed and the father works full-time, income may become a limiting factor in children's sports participation as families are more likely to be in the lowest income quintiles. In these families, 44% of mothers are involved in sports in some way as are 59% of fathers.

Children of recent immigrants are less likely to participate

Data from the 2006 Census show that the percentage of Canada's population that is foreign-born has reached its highest level in 75 years (20%).[14] In 2006, as it was in 2001, nearly 6 in 10 of recent immigrants were born in Asia (including the Middle East). One of the problems that recent immigrants face is achieving economic stability in their new country. As participation in sports often requires economic resources, children of recent immigrants may face financial barriers to sports participation.

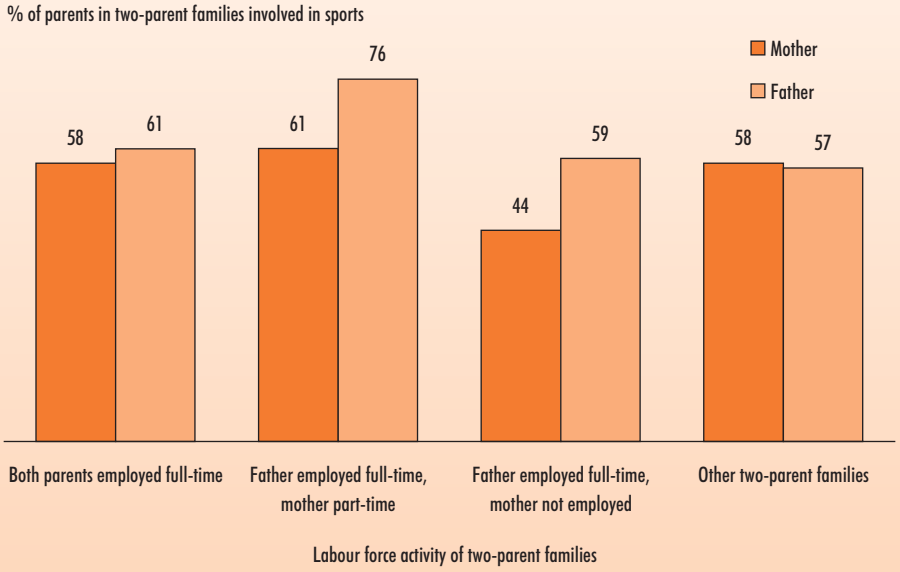
According to the 2005 GSS, children of recent immigrants (immigrants who had been in Canada for less than 10 years) are less likely to participate in sports (32%) than children of Canadian-born parents (55%). While internationally popular sports such as soccer may provide the children of recent immigrants with a familiar place to integrate into Canadian society, even in soccer, participation is lower (10%) than among those whose parents are Canadian-born (23%).

Place of residence influences sports participation

In 2005, the sports participation of children aged 5 to 14 was highest in Atlantic Canada and lowest in British Columbia and Quebec. It was also low (47%) in Canada's three largest cities (Toronto, Montréal and Vancouver) and highest in smaller cities and towns with a population between 10,000 and 50,000 (58%).

Rural Canada had lower levels of sports participation (49%), similar to that of mid-sized census metropolitan areas (51%). This result may be because sports activity in

CST Chart 4 Parents are most likely to be involved in sports if the father is employed full-time and the mother is employed part-time



Note: Sports involvement includes playing sports, coaching, refereeing, sports club or league membership, sports administration, watching amateur sports.
Source: Statistics Canada, General Social Survey, 2005.

CST Table 1 Top 10 organized sports of 5- to14-year-olds in 2005

	% of 5- to 14-year-olds regularly participating in organized sports	
	1992	2005
All sports	**57**	**51***
Soccer	12	20*
Swimming	17	12*
Hockey	12	11
Basketball	6	8
Baseball	13	5*
Volleyball	5	3*
Gymnastics	4	2
Karate	2[E]	2
Skiing, downhill	6	2*
Track and Field – Athletics	2[E]	2[E]

[E] use with caution
* Statistically significant difference from 1992 ($p<0.05$).
Source: Statistics Canada, General Social Survey, 1992 and 2005.

rural settings often involves longer distances, which may limit the opportunities to participate for rural children.

The physical environment can promote sports participation by providing clean and safe places for people to practice and compete. Studies have shown that children are likely to participate in sports if they live in neighbourhoods that are considered safe for outside play.[15,16] Neighbourhood disorder is more likely to occur in places that have higher levels of low income,[17] thereby limiting sports participation among children.

The 2005 GSS supports those earlier studies and shows that sports participation is lowest among children in high-density areas (42%) where low-income families are more likely to be found,[18] and highest in low-density suburban areas (52%) of large and mid-sized metropolitan areas.[19]

Soccer is Number One with kids

Look at the popularity of the FIFA Under-20 World Cup, a premier world event for soccer held in Canada during the summer of 2007! It's another sign that soccer has become the most common sport for both boys and girls. Once seen as a European or South American sport, soccer has caught on among Canadian youth, with nearly 20% of young people playing the game. In contrast, other sports have seen declining child participation, particularly baseball, swimming, downhill skiing[20], volleyball, gymnastics and figure skating (Table 1).

Participation rates of boys and girls have somewhat different trends in individual sports. Girls are diversifying their participation into sports once thought of as boys' sports, such as hockey and soccer; at the same time, their involvement has declined in traditional girls' sports such as swimming and figure-skating. Soccer is the only sport where boys' participation has increased significantly, while hockey – formerly the number one organized sport for boys – has seen a dip in participation, especially among boys from households in the lowest adjusted income quintile.

Summary

Children's participation in sport is influenced by gender, age, household

CST What you should know about this study

Data for this article is taken from the 1992 and 2005 General Social Survey (GSS) which asked respondents aged 15 and over living in the ten provinces to identify their own organized sports activities as well as those of other household members. In the 2005 survey, 2,021 respondents identified 3,112 children aged 5 to 14 living in the same household. For most children, the respondent was a parent (88%), a sibling (9%) or a grandparent (2%). Another 1% had other relationships with the child (e.g., aunt/uncle, cousin, nephew/niece or roommate).

Sport is defined as mainly team or organized activity such as hockey, baseball, basketball, golf, competitive swimming and soccer. A number of recreational physical activities were not defined as sports and are excluded: non-competitive aerobics, aqua fit, bicycling for recreation/transportation only, body building/body sculpting, car racing, dancing, fishing, fitness classes, hiking, jogging, lifting weights (non-competitive), motorcycling, snowmobiling, and non-competitive walking. Although dance can be an intense and highly competitive physical activity and is most popular among girls, it was not identified as a sport by the 2005 GSS.

In the 1992 GSS, cheerleading and skateboarding were also excluded from the definition of sport, but were included in sports in 2005. The inclusion of cheerleading and skateboarding in 2005 increased the overall sports participation rate for children aged 5 to 14 by less than one percentage point (rising to 49.8% versus 49.1% with the two sports excluded).

Sports participation refers to sports that one regularly participated in (at least once a week) during the previous 12 months. Children's sports participation is identified by the respondent, who was asked to report on the sports activities of no more than four other household members. This limitation may result in the underestimation of sports participation of children in large families; in 2005, however, only 0.3% children aged 5 to 14 may have been affected.

Adjusted household income quintiles

The composition and size of a household can affect its financial well-being. To compensate for these factors, household income is adjusted as follows: the oldest person in the household receives a factor of 1.0; the second oldest person in the household receives a factor of 0.4; all other household members aged 16 and over each receive a factor of 0.4; and all other household members under age 16 receive a factor of 0.3.

Quintiles are a convenient way of categorizing income from lowest income to highest income in order to draw conclusions about the sports participation of children from the bottom, top or middle part of the household income distribution. Adjusted household incomes of respondents are ranked from lowest to highest and then are traditionally divided into five groups of equal numbers of units, called quintiles. However, because the General Social Survey classifies household income into income ranges, it is only possible to divide the groups into approximately equal sizes for those reporting household income.

The first quintile (lowest) represents the households with approximately the lowest 20% of reported adjusted household income. The "2nd", "3rd –middle" and "4th" quintiles represent progressively higher levels of adjusted household income; the 5th or highest quintile represents those households from about the top 20% of adjusted household income. The GSS also has a substantial number of respondents who did not report their household income; these are shown as a separate group.

income, parental education, parental involvement in sports activities, geographic location and immigrant status of parents.

Boys are more likely than girls to be sports participants, but this gender gap is narrowing. Those in their early teens are more likely to be in sports than younger children. Children from households with high incomes and those with highly-educated parents are much more likely to be sports participants than those from low-income families or those whose parents have a high school diploma or less.

Parents who are involved in sports activities themselves boost the sports participation rates of their children, even if they are only spectators of amateur sport. In two-parent families, children's sports participation rates are highest if both parents are involved in sports activities.

Children living in smaller towns and cities (population of 10,000 to 49,999) are the most likely to be sports participants, while those living in Canada's three largest cities are the least likely. Children of recent immigrants are least likely to be sports participants.

Other factors such as the quality of school sports programs and facilities, the safety of neighbourhoods, and the influence of peers may also influence children's sports participation, but these factors were not examined in the 2005 General Social Survey.

Warren Clark is a senior analyst with *Canadian Social Trends,* Social and Aboriginal Statistics Division, Statistics Canada.

1. Bloom, M., Grant, M., & Watt, D. (2005). Strengthening Canada — The social-economic benefits of sport participation in Canada. The Conference Board of Canada, August 2005. (p. iii). Retrieved September 13, 2007, from http://www.pch.gc.ca/progs/sc/pubs/socio-eco/sports_participation_e.pdf
2. Shields, M. (2006). Overweight and obesity among children and youth. *Health Reports* 17(3). 27-42, Statistics Canada, Catalogue no. 82-003. Ottawa: Minister of Industry. Retrieved March 27, 2008 from http://www.statcan.ca/english/studies/82-003/archive/2006/17-3-b.pdf
3. Tremblay, M. S., & Willms, J. D. (2000). Secular trends in the body mass index of Canadian children. *Canadian Medical Association Journal, 163*(11), 1429-1433. Also, Erratum published in 2001, 164(7), 970.
4. Tremblay, M. S., & Willms, J. D. (2003). Is the Canadian childhood obesity epidemic related to physical activity. *International Journal of Obesity, 27*, 1100-1105.
5. Côté, J. & Hay, J. (2002). Family influences on youth sport performance and participation. In Silva, J. & Stevens, D. (Eds.). *Psychological foundations of sports* (pp. 503-519). Boston, MA: Allyn and Bacon.
6. The 2005 General Social Survey asked respondents to identify other household members who regularly participate in organized sports. Some of these household members were children aged 5 to 14, the group of interest in this article. The GSS samples Canadians aged 15 and over living in the 10 provinces and therefore does not directly count the number of children. The 2.0 million count of 5- to 14-year-olds who regularly participated in organized sports is obtained by applying the sports participation rate of 5- to 14-year-olds from the GSS sample to the population estimate of 5- to 14-year-olds in the 10 provinces for 2005 published by Demography Division, Statistics Canada.
7. Five- to ten-year-old boys' sports participation rate dropped from 60% in 1992 to 52% in 2005, whereas girls of the same age remained relatively stable (at 45% in 1992 and 43% in 2005—a difference that is not statistically significant). Among 11- to 14-year-olds, boys' participation dropped from 74% to 62% while girls' dropped from 54% to 48%.
8. Statistics Canada. (2006). *Detailed average household expenditure by household type, Canada, 2005.* Statistics Canada, Catalogue no. 62F0034XDB. Ottawa: Minister of Industry.
9. Only 39% of children in households not reporting their household income were sports participants.
10. Parents who play organized sports and watch amateur sports.
11. Kremarik, F. (2000). A family affair: Children's participation in sports. *Canadian Social Trends,* No. 58, 20-24. Retrieved on April 9th, 2008, from http://www.statcan.ca/english/freepub/11-008-XIE/2000002/articles/5166.pdf
12. Collins, M. F., & Kay, T. (2003). *Sport and social exclusion*. New York: Routeledge
13. Hellstedt, J.C. (1995). Invisible players: A family system Model. In Murphy S.M. (Ed.). *Sport Psychology Interventions*. Champaign, IL: Human Kinetics, 117-146.
14. Chui, T., Tran, K., & Maheux, H. (2007). *Immigration in Canada: A portrait of the foreign-born population, 2006 Census*. Statistics Canada, Catalogue no. 97-557-XIE. Retrieved February 19, 2008, from http://www12.statcan.ca/english/census06/analysis/immcit/pdf/97-557-XIE2006001.pdf
15. Cragg, S., Cameron, C., Craig, C. L., & Russell, S. (1999). Canada's children and youth: A physical activity profile. *Ottawa: Canadian Fitness and Lifestyle Research Institute*. Retrieved January 28, 2008, from www.cflri.ca/pdf/e/98NLSCY.pdf
16. Cragg, S., & Cameron, C. (2006). Physical Activity of Canadian Youth – an analysis of 2002 health behaviour in school-aged children data. *Ottawa: Canadian Fitness and Lifestyle Research Institute*. Retrieved November 17, 2007, from www.cflri.ca/eng/statistics/surveys/documents/HBSC.pdf
17. Kohen, D. E. et al. (2002). Neighborhood income and physical and social disorder in Canada: Associations with young children's competencies. *Child Development, 73*(6), 1844-1860.
18. Turcotte, M. (2008). Life in metropolitan areas–The city/suburb contrast: How can we measure it? *Canadian Social Trends, 85,* 2-19. Statistics Canada, Catalogue no. 11-008-XIE. Retrieved February 27, 2008, from http://www.statcan.ca/english/freepub/11-008-XIE/2008001/article/10459-en.pdf
19. Large and mid-sized CMAs include those with a population of over 250,000 in 2001 which are: Toronto, Montréal, Vancouver, Ottawa-Gatineau, Calgary, Edmonton, Quebec City, Winnipeg, Hamilton, Windsor, London, St. Catharines, Victoria, Oshawa and Kitchener.
20. The drop in participation in downhill skiing may be partially related to the availability of snow during the winter. During January-March 2005 and December 2005, the prime skiing season for many Canadians, there was less snow than during winters in the 1990s.

CST Table A1 Sports participation of children aged 5 to 14 by socio-demographic characteristics, 2005

	Gender of child aged 5 to 14		
	Both sexes	Boys	Girls
	(% of children aged 5 to 14 who regularly participated in organized sports during the last 12 months)		
All children aged 5 to 14	51	56	45
Age of child			
5 to 10 †	47	52	43
11 to 14	55*	62*	48
Family type			
Intact †	53	58	48
Step or blended	46	54	37*
Lone-parent	47	55	39*
Sports activity level of parents			
No interest in sports †	24	27	22
Spectator only	62*	73*	52*
Participant only	46*	49*	44*
Participant and spectator	69*	77*	63*
Administrator/referee/coach	82*	86*	77*
Number of parents involved in sports			
Two-parent families	52	57	46
Neither parent †	22	26	19
One parent	49*	55*	43*
Both parents	75*	81*	70*
Lone-parent families	47	55	39
Parent not involved in sports †	27	29	26[E]
Parent involved in sports	69*	82*	53*
Labour force activity of parents			
Two-parent families			
Both parents employed full-time	58	64	52
Father employed full-time/Mother part-time †	66	69	63
Father employed full-time/Mother not employed	38*	42*	35*
Other two-parent families	51*	49*	53
Lone-parent families			
Employed full-time	53	65	40*
Employed part-time †	57	52[E]	61
Lone parent not employed	40	46	34*[E]
Adjusted household income quintiles			
Lowest †	44	52	35
2nd	44	50	38
3rd (middle)	56*	62	50*
4th	60*	64*	55*
Highest	68*	75*	61*
Not reported	39	43	36

	Gender of child aged 5 to 14		
	Both sexes	Boys	Girls
	(% of children aged 5 to 14 who regularly participated in organized sports during the last 12 months)		
Highest level of schooling of parents			
Some secondary/elementary/ no schooling	22*[E]	28*[E]	16*[E]
High school diploma	42*	50	34*
Some university/community college	49*	53	45*
Diploma/certificate from community college or trade/technical	54	59	48*
Bachelor's degree	57	66	48
Doctorate/master's/first professional †	60	62	59
Age of mother			
Less than 30 †	39	42	35
Thirties	47*	52*	43*
Forties	57*	64*	48*
50 and over	50*	53*	46*
Period of immigration of parent			
Canadian-born †	55	61	49
Before 1986	50	55	46
1986-1995	35*	33*[E]	37[E]
After 1995	32*	36*[E]	28*[E]
Not reported	41*	51*	30*
Region			
Atlantic †	61	67	55
Québec	48*	57*	38*
Ontario	52*	57*	47
Prairies	53*	56*	48
British Columbia	44*	49*	40*
Population size of Census Metropolitan Area (CMA) or Census Agglomeration (CA)			
Large CMAs (Toronto, Montreal, Vancouver) †	47	52	41
Mid-size CMAs (250,000+)	51	56	46
Small CMAs & CAs (50,000-<250,000)	57*	68*	44
Small cities and towns 10,000-<50,000	58*	64*	52*
Rural	49	55	43
Relative Housing density of neighbourhood			
High †	42	43	41
Medium	45	55	35
Low	52*	58*	47
Outside major urban centres	54*	59*	48

[E] use with caution

† Reference group.

* Statistically significant difference from reference group at $p<0.05$.

Source: Statistics Canada, General Social Survey, 2005.

City of Québec 1608-2008: 400 years of censuses

by Gwenaël Cartier

This article was adapted from "Québec 1608 à 2008 : 400 ans de statistiques démographiques", which will be published in Les cahiers québecois de démographie *in August* 2008. *http://www.demo.umontreal.ca/adq/cahiers.html*

The founding of Québec City

On April 13, 1608, Samuel de Champlain embarked on his third voyage to New France. Pierre DuGua de Mons had commissioned him to establish a permanent trading post in the lands explored just less than a century earlier by Jacques Cartier.[1] Champlain landed at Québec on July 3, 1608, with a crew of 28 men. Unaccustomed to the very harsh living conditions, only 8 crew members survived the first winter.

So began the history of Québec City, which is now, 400 years later, the oldest francophone city in North America.

The complete history of Québec City's population in its early years was not reported in any official federal government document until the first census of the new Confederation, held in 1871. A revision of the data was published following the 1931 Census. These two censuses, along with some statistics from others, were used to prepare this portrait of Québec City's development from its birth to its 400th anniversary.

Before the founding of Trois-Rivières in 1634 and Montréal in 1642, the population of Québec City was, for all intents and purposes, the population of New France. Immigration, though responsible for most of the city's early growth, was a minor factor until the city fell to the Kirke brothers in 1629. After this event, little is known about Québec City's population until Jean Talon arrived and conducted the first census almost 40 years later.

Samuel de Champlain
Source: The Canadian Online Atlas
The Royal Canadian Geographical Society

Jean Talon conducts the first census

Although 36 censuses were conducted while the colony belonged to the French regime, only 15 of them provide statistics specific to Québec City. The practice of census-taking began in New France with the arrival of its first intendant, Jean Talon,[2] on September 12, 1665. Along with the rest of 17th century New France, Québec City was one of the first places in North America in which a census was taken,[3] and it was held at a time when the young colony was just getting organized. Talon conducted it shortly after his arrival, actually going door-to-door in person to collect the information. There was a great deal of territory to cover, and he did not finish until 1666.

Talon's initial results describe a New France dominated by Québec City and the surrounding area (Chart 1).

The data show a substantial imbalance between the sexes. In a population of 547 persons, there were about 50% more men than women in Québec City, a situation that was similar throughout New France. This finding prompted one of Talon's first recommendations to the King, which was to promote immigration by women.

A breakdown of the data by marital status shows that 46.2% of the colony's inhabitants were unmarried and that almost all (over 90%) of these unmarried settlers were men. In fact, until 1617, there were no women in Québec City, and there was little incentive for them to go there. However, as a result of Talon's work, more than 1,000 women, including

some 900 "King's Daughters",[4] arrived in New France between 1667 and 1673 to help populate the colony.

Talon's censuses provided a picture of the colony from various perspectives. For example, in 1666, he found that 763 of the 1,378 individuals aged 15 and over were workers employed in 50 different trades and occupations. (Presumably, these figures do not include women and soldiers.)

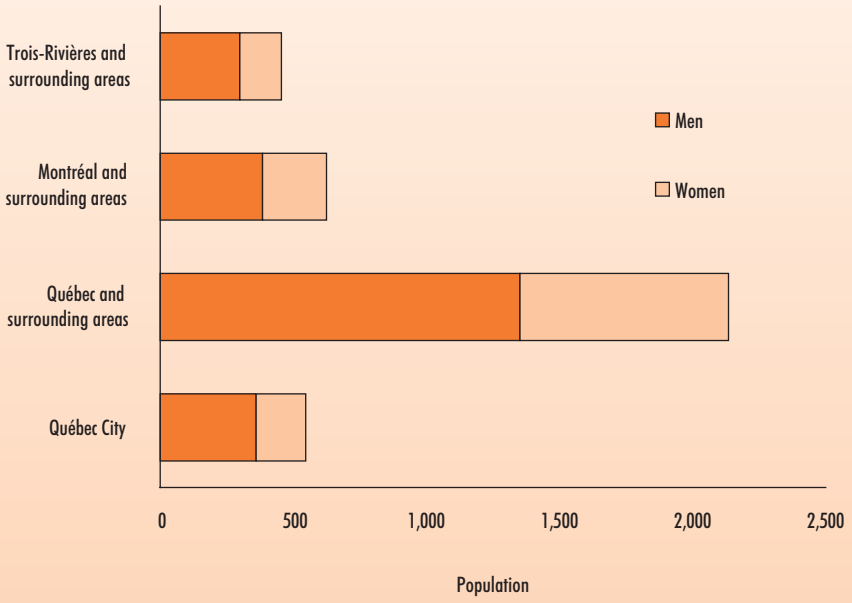
The Census of 1681

Following the censuses taken by Talon in 1666 and 1667, his replacement Jacques Duchesneau[5] conducted five more between 1675 and 1681. The colony's population tripled between 1666 and 1681, rising from 3,215 to 9,677. Québec City benefited from this growth, as its population climbed from 547 to 1,345 over the 15-year period. However, it had a slightly slower rate of increase than the rest of the colony as neighbouring areas enjoyed a more rapid growth.

The most obvious impact of Jean Talon's work on daily life in Québec City must be the reduced demographic imbalance between the sexes. Between 1666 and 1681 the sex ratio fell from three men to one woman among the population aged 15 and over to less than two to one, as the male share of the city's population hovered just above 60% (61.2%). Furthermore, the arrival of the King's Daughters boosted the proportion of the population under age 15 from slightly over 30% to nearly 40%. Consequently, the median age of the population, which was probably about 22.5 years in 1667, also dropped to about 19 years by 1681.

Source: Jean Talon by Théophile Hamel
Museum of Civilization, collection of Séminaire de Québec
No. 1993.16425

Chart 1 In 1665-1666, Québec City was the metropolis of New France



Source: Department of Agriculture, Census of Canada from 1870-71, vol. IV, Ottawa 1878, p 2.

Other censuses of the French regime

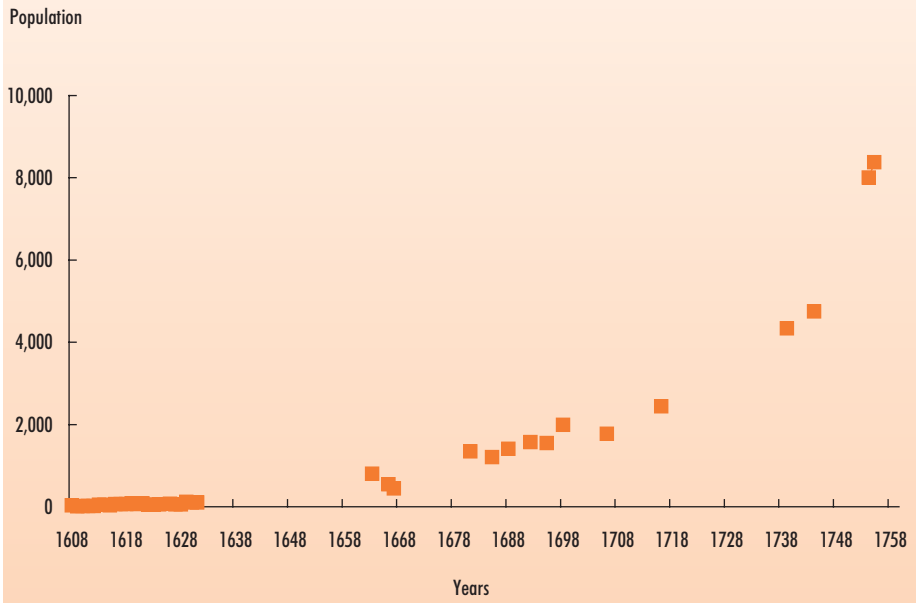
Although the French regime conducted 28 more censuses after 1681, none provided as much information as those undertaken by Talon and Duchesneau.

Québec City's population shrank between 1698 and 1706, probably because the population in the surrounding areas increased. The number of settlements in the colony grew steadily, climbing from about 10 as counted in the first census to nearly 100 at the time of the change to British rule in 1763. In the 1765 census, people were enumerated in 113 locations. In sum, from the arrival of Samuel de Champlain and his 28 men in 1608, the population of the city of Québec grew to number 8,001 persons at the time of the last census of the French regime, conducted by Intendant François Bigot in 1754 (Chart 2).

Québec City under the British Empire

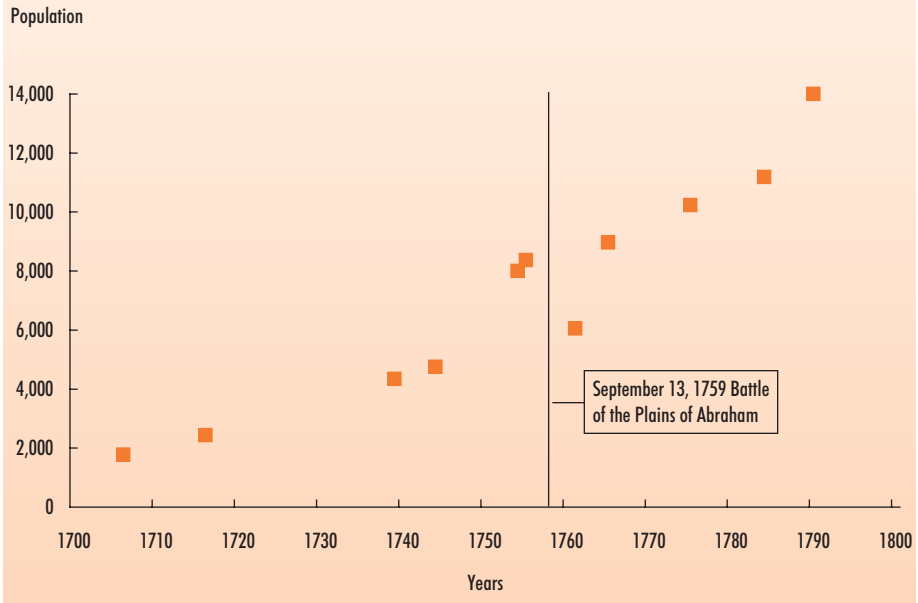
The frequency of census-taking slowed when New France became part of the British Empire. Only three censuses were held in the second half of the 18th century – in 1765, 1784 and 1790. Instead, the tradition of having regular censuses, started by Jean Talon a century earlier, became more a tradition of having surveys.[6] These surveys were targeted to settlements or to very specific topics. They were also conducted on an ad hoc basis. For example, in 1763, only families were counted in the survey; the results showed that there were 4,727 families in Québec City and 5,302 in Montréal. In the same

CST Chart 2 Under the French regime, the population of Quebec experienced rapid growth after 1716



Source: Dominion Bureau of Statistics, from 1608 to 1663. Department of Agriculture, from 1666 to 1754. 1739 and 1755 estimated by Gwenaël Cartier, demographer at Statistics Canada.

CST Chart 3 After the Conquest of 1763, population growth in Québec City resumed



Source: Dominion Bureau of Statistics, 1716, 1744. Department of Agriculture, 1706, 1754, 1765 and 1790. Data points for the other years have been estimated by Gwenaël Cartier, demographer at Statistics Canada.

way, in 1764, heads of Protestant families were enumerated and found to number 144 in Québec City and 56 in Montréal.

Under the new administration, the post of Intendant was abolished, and its functions were assigned to the governor. Québec City also lost its status as the regional metropolis. By the end of the 18th century, it was smaller than Montréal, which became the new metropolis with a population of 18,000 in 1790. Nevertheless, Québec City, with its 14,000 inhabitants, remained the province's seat of government and its second-largest city. (The 1754 Census was the last to provide complete information about Québec City and Montréal until the census of 1825. The data presented here for the years at the end of the 18th century are estimates.[7])

The population of Québec City fluctuated throughout the 18th century, However, it is apparent that the growth of the city resumed despite the change in governing power (Chart 3).

It is also worth noting some specific points about Québec City's population in the late 18th century. According to the 1784 Census, 88 slaves lived in the region of Québec City. This particular aspect of life in the province was never described in the censuses of New France.[8]

Québec City, capital of Lower Canada

A decree signed by King George III of England (*Constitutional Act of Canada*, June 10, 1791) created the provinces of Upper and Lower Canada and made Québec City the capital of Lower Canada. However, there is no information about Québec City's population until the first census of Lower Canada in 1825.

The first censuses in the 19th century

In 1825, the census tells us that the population of Québec City passed the 20,000 mark, with a total count of 22,101. After this date, population

CST Defining the district of Quebec

The vocabulary used by the census to describe particular places or persons has transformed itself over time, leading to possible confusion about the terms. In the case of the word "district," beginning with the British regime, this term designated a large region named after the largest city within its boundaries. All districts together encompassed the entire territory.

The best example to illustrate the representation as well as the composition of districts is provided by Table I[1] in the 1827 Census of Lower Canada. It contains population data for each district (Québec, Montréal, Trois-Rivières and Gaspé) as well as data for the counties in the districts.

The term district was used for the first time in the Census of 1784.[2] The districts replaced the areas defined by the term *gouvernement* during the French regime.

Beginning in 1871, the mandate of the census included determining electoral representation, and this new purpose altered the use of the district as a geographic concept. This is shown by the first map of the new districts comprising the province of Quebec,[3] where the number of districts in the province increase from 4 to 83; at the same time, the city of Quebec no longer forms part of the district of that name, but instead is composed of three districts numbered 145, 146 and 147.

In the provinces of Ontario and Quebec, districts and counties are often confused.[4] Even the organizers of the Census of 1891 struggled with the concept, as county commissioners and district enumerators reported to the chief census officers. Table VI[5] of the Census of 1891 offers the first comparison of electoral districts and census districts.

In the next census in 1901, population data were presented for census districts for the first time,[6] but in 1911, the distinction between the two types of districts was less clear. By the time of the 1921 Census, the concept of federal electoral ridings associated with districts and sub-districts[7] makes its first appearance, as does the replacement of census districts with census divisions.[8]

1. Minister of Agriculture. (1878). *Census of Canada*, 1870-71. Vol. IV. Ottawa.
2. Minister of Agriculture. (1878).
3. Minister of Agriculture. (1873). *Census of Canada*, 1870-71. Vol. I. Ottawa.
4. Minister of Agriculture. (1893). *Census of Canada*, 1890-91. Vol. I.
5. Minister of Agriculture. (1893), Table VI.
6. Minister of Agriculture. (1903). *Census of Canada*, 1901. Vol. I. Ottawa, Table 11.
7. Dominion Bureau of Statistics. (1924). *Census of Canada*, 1921. Vol. I. Ottawa.
8. Dominion Bureau of Statistics. (1924), Table 16.

data are not available for Québec City proper until the 1851 Census, as intervening censuses provided data for the district of Québec only.

The first census of industries was taken in 1827. Thus, we learn that the largest of the 14 types of industries in terms of establishments was sawmills. More of these mills were located in Québec City (288) than Montréal (200); however, Montréal surpassed it in terms of total number of industrial establishments, at 899 compared with 479. Talon started this trend, in a sense, by identifying occupations in 1666.

In 1831, the population was classified by religion for the first time. Previously, it was churches that had been enumerated in certain censuses. The census shows about 75% of the population of Lower Canada was Catholic and this proportion was reflected in the districts of Québec and Montréal. However, Anglicans were relatively more numerous in the region of Québec (15.4%) than that of Montréal (13.5%), while the reverse was true of the population self-identifying as members of the Church of Scotland (6.0% and 8.3%, respectively).

Many other variables, in addition to religion and industry, made their first appearance in the Census of 1844: place of birth, education, health, occupation, and so on. Also in 1844, Québec City was experiencing another large wave of immigration;[9] 25% to 30% of the population were born outside the country, many of them in Ireland. The large presence of the Irish was due to the events of the 19th century, especially after 1815, when a growing population and deteriorating economic situation drove more and more people to leave their home country. This mass migration peaked following the terrible potato famine of the late 1840s.[10]

According to the data available for Lower Canada as well as for the districts of Québec and Montréal (which include the cities and their surrounding areas), we can reasonably deduce that in 1844, francophones probably accounted for less than half the populations of the cities of Québec and Montréal. In fact, in 1844, 75% of the population of Lower Canada was francophone, compared with 60.5% in the district

of Québec and 52.2% in the district of Montréal.

Decennial censuses

A firm believer in the importance of censuses, James Bruce, Lord Elgin and governor-general of Canada approved the establishment of the Board of Registration and Statistics in 1847. Under the *Census Act of the United Provinces*, a census was to be conducted in February and March of 1848 and again in the same months two years later.[11] On August 30, 1851, royal assent was given to a new law requiring that regular censuses be conducted starting in 1851 and continuing in 1861 and every tenth year thereafter. Thus, we can say that the year 1851 marked the beginning of Canada's decennial census. These innovations in census-taking would provide more reliable and regular statistics than had been available in the previous 100 years.

The 1851 and 1861 censuses

The 1851 and 1861 censuses are the only two decennial censuses conducted in Lower Canada. The population of Québec City stood at 42,052 in 1851, almost double its size in 1825. It continued to grow thereafter, reaching 51,109 persons in 1861. The large increase in population during the 19th century was the combined result of a relative decline in mortality and an increase in the birth rate.[12] And despite sustained immigration, the effect of this dynamic growth was also to increase the share of the population born in Canada from less than 70% in 1825 to almost 80% in 1861.

Confederation

The rebellions of 1837 and the widespread popular demand for an elected government based on representation by population led to the passage of the *Constitution Act*, 1867. Under Sections 8 and 51 of the Act, the census was to provide population figures that would be used to establish the number of representatives each province would elect to the House of Commons. The key impact lay in the fact that it influenced the decision to standardize the *de jure* method and to conduct a census for specific geographic regions on a set date every 10 years. Thus, the first census taken under the *Act* was in 1871. Joseph Charles Taché played a key role in census-taking during the period from Confederation to the appointment of the first Dominion Statistician and the establishment of a permanent bureau of census and statistics.[13]

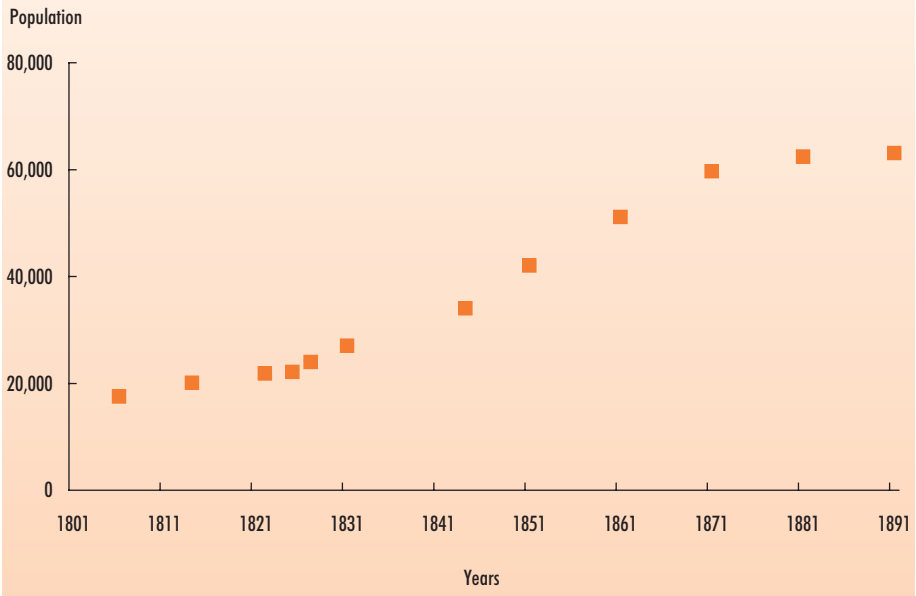
More detailed geographies provided better data for analyzing the demographic characteristics of the expanding urban population. The census of 1871 marks a turning point for the dissemination of new population statistics for Québec City. Data for neighbourhoods allows us to better appreciate the demographic changes occurring at the end of the 19th century. For example, in the context of the transition from a commercial to industrial economy, we can see the growth in population in neighbourhoods like St-Roch, Jacques-Cartier, St-Saveur and St-Vallier in the eastern quarter of the city. The population there jumped from 28,305 in 1871 to 36,200 in 1891, while it declined in other neighbourhoods. In the late 19th century, the growth of Québec City slowed dramatically (Chart 4).

The 20th century

The pattern of decennial censuses that began in the latter half of the 19th century continued into the following century, providing valuable demographic information about Québec City. In addition, quinquennial censuses were instituted in 1956.

Early in the 20th century, Québec City enjoyed a population boom. Indeed, the city's third century can be divided into two distinct periods of growth. First, its population expanded from 68,840 in 1901 to 171,979 in 1961, following a pattern of almost continuous growth at a pace that did not begin to slow until after 1931. Subsequently, despite an increase in

CST Chart 4 The population of Québec city stablized at the end of the 19th century



Source: Dominion Bureau of Statistics, from 1871 to 1891. Department of Agriculture, 1825, 1851 and 1861. The other years have been estimated by Gwenaël Cartier, demographer at Statistics Canada.

1971, the population remained stable until 2001 (Chart 5).

The 21st century

On the basis of the results of the 2001 Census, the 21st century started out like the previous one. The population of Québec City on May 15, 2001, was 169,076, up slightly from the 1996 Census but still below the peak of 171,979 enumerated in 1961. The pattern of ongoing stability continued into the early part of the 21st century.

The municipal mergers of 2002

On January 1, 2002, there was a major change. Thirteen municipalities were amalgamated together to form a new Québec City. Overnight, this merger made the city's population balloon to 507,991.[14] Four years later, another significant development took place. On January 1, 2006, two municipalities broke away from the new Québec City. As a result, the city "lost" 31,661 residents,[15] and its population dropped below the half-million mark.

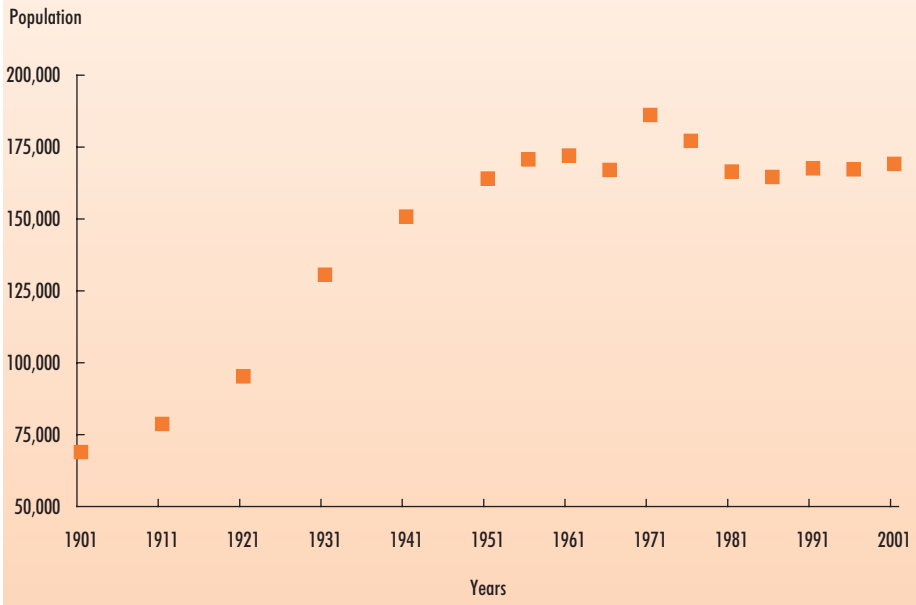
The 2006 Census

Thanks to the municipal mergers, the population of Québec City jumped from 169,076 in 2001 to 491,142 on May 16, 2006, the date of the most recent census. This made Québec City the province's second-largest city once again.[16]

At the time of writing, not all results are available from the 2006 Census, but we can state that the population of Québec City continues to age. In fact, persons aged 65 and older represent more than 16% of the total population, a historic high. In this context, another statistic needs to be emphasized: 53% of the population aged 15 and over was living in a couple (married or common law), a proportion which has not been seen since 1825.

In 2006, Québec City was a very francophone city, with almost 95% of residents affirming that French was their only mother tongue. On the other hand, persons born abroad accounted for about 5% of the population, exceeding the previous high of 4.5% recorded in 1891.

Chart 5 The population of Québec City doubled between 1901 and 1941, and peaked in 1971



Source: Dominion Bureau of Statistics, from 1901 to 1941. Statistics Canada, from 1951 to 2001.

Québec City on its 400th anniversary

On July 3, 2008, Québec City will celebrate its 400th birthday. What will its population be on that day? According to municipal population estimates published by the Institut de la Statistique du Québec, its population was 502,119 in 2007.[17] So we can say that Québec City will have a population of more than half a million as it celebrates its 400th anniversary. What a tribute to Samuel de Champlain and his crew, who founded the City of Québec under such harsh conditions.

Gwenaël Cartier is a Regional Account Manager, Eastern Region (Montréal), Statistics Canada.

1. Statistics Canada. (1984). *In the footsteps of Jacques Cartier*, Catalogue No. 11-X-524E. Ottawa; Minister of Industry. p. 52.
2. Jean Talon was Intendant of Justice, Police and Finance of New France for two terms, 1665-1668 and 1670-1672. Louis Robert de Fortel was originally selected as New France's first Intendant, but he never held the office. Talon conducted three censuses (1666, 1667 and 1671).
3. Statistics Canada. (2002). *2001 Census Handbook*. Catalogue No. 92-379-XPB. Ottawa; Minister of Industry. p. 1.
4. Statistics Canada, ESTAT, Jean Talon, http://www.statcan.ca/english/freepub/98-187-XIE/jt.htm.
5. Jacques Duchesneau conducted the 1675, 1676, 1679 and 1681 censuses. Duchesneau did not take Talon's place until 1675, as Frontenac governed New France without an intendant between 1672 and 1675.
6. Statistics Canada. (2002). *2001 Census Handbook*, p.2.
7. Regarding the size of the population of Québec City at the time of the 1765 census, a note written during the 1871 census indicates the use of an "estimate calculated as a proportion of previous censuses" for both Québec City and Montréal. In the 1784 census, the data collected tell us only about the demographic situation for the districts of Québec, Montréal and Trois-Rivières; the writer calculated an estimate based equally on those of Bouchette as well

as information from other censuses. As regards the population of Québec City at the time of the 1790 census, a note indicates it is approximately the same as in the census of 1765.

8. Mathieu de Costa worked for Pierre DuGua de Mons and also apparently served as Champlain's interpreter in his contacts with the Aboriginal peoples. Intendant Raudot legalized slavery in New France on April 13, 1709 [Dictionary of Canadian Biography Online. http://www.biographi.ca/EN/index.html]
9. In 1844, there were 87,178 immigrants in Lower Canada, which had a total population of 697,084.
10. Canadian Encyclopedia Historica. Accessed on April 3, 2008. http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=f1SEC852191
11. Statistics Canada. (2002). *2001 Census Handbook*, p.2.
12. Vital statistics for Québec City for the period 1771 to 1870 are available in Volume V of the Census of 1871.
13. Statistics Canada. (1993). *75 Years and Counting: A History of Statistics Canada*. Ottawa: Minister of Industry.p 6.
14. The population of Québec City on May 15, 2001, based on January 1, 2002, geography. Statistics Canada SGC 2006, Volume 1, Catalogue no. 12-517-XWE. Ottawa: Minister of Industry.
15. Statistics Canada (2006).
16. In the 2001 Census, the city of Laval came second with a population of 343,005. Five years later, it ranked third with a population of 368,709.
17. This estimate is available on the Web site of the Ministère des Affaires municipales et Régions du Québec in connection with the population decree. http://www.mamr.gouv.qc.ca/organisation/orga_donn_popu.asp

CST Census snapshot: Canada's Changing Labour Force, 2006 Census

As part of its contribution to dissemination of Census findings, Canadian Social Trends *is highlighting some of the key trends observed in the* 2006 *Census of Population. In this issue, we present a brief adaptation of* **Canada's Changing Labour Force, 2006 Census** (*Catalogue no.* 97-559).

Overview of Canada's changing labour force

Between 2001 and 2006, total employment in Canada increased at an annual average rate of 1.7%, the fastest rate increase among the Group of Seven (G7) nations. Italy's growth rate of 1.2% was second followed by France and the United States of America. According to data from the Labour Force Survey, Canada's strong employment growth has continued beyond 2006. Employment rose in every part of the country. However, growth was strongest in the West, especially in Alberta and British Columbia.

Goods industries

Fastest growth in mining and oil and gas extraction

Among the goods industries, the fastest growth in employment between 2001 and 2006 occurred in the mining and oil and gas extraction industry. Employment reached 222,700 by 2006, an annual average gain of 7.5%. This was almost four times the national average of 1.7%. Alberta alone accounted for 70% of the employment growth in this industry.

Employment increased a strong 4.5% per year on average in the construction sector, bringing total employment to 991,200 in 2006. The gain in construction employment in Alberta and British Columbia exceeded the increase in Ontario and Quebec.

Largest decline in manufacturing

On the downside, manufacturing shed 136,700 jobs between 2001 and 2006, equivalent to a 1.4% decline per year. Total employment fell from about 2,033,200 to roughly 1,896,500. These losses were concentrated in Ontario (77,700 manufacturing jobs) and Quebec (56,600).

Canada's cut and sew clothing manufacturing industry lost nearly 33,000 jobs during the intercensal period, a 9.3% average annual decline.

Employment in the computer and telecommunications (CT) sector fell by 28,200, and was acutely felt in Ottawa–Gatineau.

The pulp, paper and paperboard mills industries shed 14,400 jobs over the five-year period, and employment in the sawmills and wood preservation industry fell by 14,200, with roughly half of the decline occurring in British Columbia.

Service industries

In contrast to the goods industries, employment increased across the board among the industries in Canada's services sector. Census data showed that employment in Canada's big retail trade sector, the largest service industry, was approaching parity with manufacturing.

Employment increased by 1.8% a year on average in retail trade between 2001 and 2006, or a total of 155,800 workers. This put the number of retail jobs at just over 1,815,000. Most of the big employment increase came from grocery stores, building materials and supplies stores and automobile dealerships.

Probably as a spin-off to the housing boom, employment growth was a strong 3.3% annual average in real estate, rental and leasing. This industry employed just over 293,000 people in 2006.

Strong growth also occurred in professional, scientific and technical services, which added 142,300 jobs, equal to an annual average rate of 2.9%. One factor in the growth of this industry was the demand for workers in architectural, engineering and related services, which was likely the result of increased demand for these services from the construction and oil and gas industries.

Canada's second largest service industry, health care and social assistance, added 199,900 workers, to bring employment in health care and social assistance to 1,667,700 in 2006. Increases were largest in Ontario, Quebec and Alberta.

Employment in the educational services industry rose by 123,600, or an average annual rate of 2.4%, bringing the total to 1,110,000 in 2006. Universities saw particularly fast growth, as enrolment also climbed.

Public administration grew to reach 943,700 in 2006, an average annual growth rate of 1.7% (the same rate as national employment growth). Overall, the bulk of these gains came from local, municipal, and regional public administrations.

CST Census snapshot: Canada's Changing Labour Force, 2006 Census – continued

Occupations

Small group has fastest growth in employment

The shift in industrial demand for workers to different parts of the economy had an impact on the occupational make-up of the nation. For example, the oil and gas industry is still relatively small, but its rapid expansion in recent years has meant huge gains for a number of occupations.

The number of oil and gas well drillers, servicers, testers and related workers almost doubled to 11,500, making it the fastest growing occupation between 2001 and 2006.

The housing boom ignited a round of hiring. Production clerks, many of whom are employed by construction businesses, saw their numbers increase 73.3% to 24,100. Meanwhile, the number of construction trades helpers and labourers rose 57.2% in 2006 to nearly 143,900. Many big ticket purchases increased work for loan officers to nearly 35,400, a gain of 13,900 (64.5%) since 2001.

Employment growth was also strong among postsecondary teaching and research assistants (65.7%). This gain mirrored the increase in postsecondary enrolment in recent years.

Census data showed 36,500 working estheticians, electrologists and related occupations, up 57.4% from 2001. This growth could be a reflection of Canada's expanding spa industry.

Fastest growing occupations, 2001 to 2006, Canada

Occupation	Employment in 2006	% growth 2001-2006
Oil and gas well drillers, servicers, testers and related workers	11,500	78
Production clerks[1]	24,100	73
Postsecondary teaching and research assistants	61,500	66
Loan officers	35,400	65
Construction inspectors	13,700	62
Estheticians, electrologists and related occupations	36,500	57
Construction trades helpers and labourers	143,900	57
Administrative clerks	101,700	54
Refrigeration and air conditioning mechanics	21,400	54
Petroleum engineers	9,000	54

1. Such as those employed by construction businesses to prepare production schedules.
Sources: Statistics Canada, censuses of population, 2001 and 2006.

Most common occupations

Between 2001 and 2006, truck driving was replaced by retail salespersons and sales clerks as the most common occupation among men. The third most common occupation among men was still retail trade managers.

Among women, the most prevalent occupation reported in 2006 was also retail salespeople and clerks, at just over 400,000. Cashiers were second at 256,000. With added hiring in health care and social assistance, nursing became the third most common occupation, moving up a couple of ranks since 2001.

Several occupations in manufacturing experienced large declines. For example, the number of machine operators dropped by 52,700 between 2001 and 2006. The number of metal fabricators, which included steel workers, fell by about 6,800, or 34.4%, and the number of mechanical assemblers and inspectors, including auto parts assemblers, who have a big presence in southern Ontario, also fell by 6,100, or 33.3%.

About 24,200 people in 2006 worked as electronics assemblers, fabricators, inspectors and testers, down 18.8% from 2001. These also included workers who manufacture audiovisual equipment, such as stereos, televisions and computer parts.

Lowest unemployment rate among those who studied education

By 2006, unemployment rates among people with all levels of education were relatively low compared to previous years. The Canadian economy, however, still places a premium on workers with higher levels of education. According to the census, Canadian workers ages 25 to 54 who had not completed high school had an unemployment rate of 9.4%. This was more than twice the rate of 4.2% among those who had completed a university degree.

The type of program that people have completed can also affect their chances of employment. Among people with postsecondary education, those in education studies had the lowest unemployment rate in 2006, at 3.0%.

Other fields of study for which graduates had low unemployment included biblical studies (3.2%), agriculture, health services, as well as parks, recreation and leisure studies (all were 3.6%).

Most common occupations for men and women, Canada, 2006

	Employment in 2006	Change 2001-2006
Men		
Retail salespersons and sales clerks	285,800	63,600
Truck drivers	**276,200**	**40,900**
Retail trade managers	192,200	-8,100
Janitors, caretakers and building superintendents	**154,100**	**18,800**
Farmers and farm managers	147,800	-21,200
Material handlers	**147,000**	**13,900**
Automotive service technicians, truck and bus mechanics and mechanical repairers	143,000	20,400
Carpenters	142,400	32,900
Construction trades helpers and labourers	133,600	47,500
Sales, marketing and advertising managers	102,600	10,200
Women		
Retail salespersons and sales clerks	400,000	68,600
Cashiers	255,500	35,500
Registered nurses	249,400	33,800
General office clerks	244,200	23,100
Secretaries (except legal and medical)	237,300	-16,500
Elementary school and kindergarten teachers	241,600	19,900
Food counter attendants, kitchen helpers and related occupations	194,800	23,100
Early childhood educators and assistants	157,700	31,700
Food and beverage servers	**152,000**	**-2,900**
Light duty cleaners	147,400	24,400

Sources: Statistics Canada, censuses of population, 2001 and 2006.

Labour mobility highest in North and Alberta

According to data on labour mobility, 562,800 (3.4%) of the total labour force moved to a different province or territory between 2001 and 2006.The most mobile area was the Northwest Territories, where more than one-fifth (21.5%) of its labour force had lived elsewhere in Canada in 2001, followed by Nunavut (15.7%) and the Yukon Territory (14.1%).

Among the provinces, Alberta had the labour force with the highest mobility in 2006, with 8.6% having lived in another province or territory five years earlier. An estimated 160,500 people in Alberta's labour force had moved to the province from other parts of Canada since 2001.

Mobility was highest in two industries: mining, oil and gas extraction, and public administration. In the mining, oil and gas industry, a full 8.1% of those employed in the industry, about 17,700 workers, had lived in another province or territory five years earlier.

An estimated 51,400 people in public administration, 5.5% of the workforce, had also moved from one province or territory to another in the intercenal period.

The aging workforce

Census data showed that in 2006, workers aged 55 and older accounted for 15.3% of the total labour force, up from 11.7% in 2001.As a result, the median age of the labour force surpassed the 40-year mark for the first time; it rose from 39.5 years in 2001 to 41.2 years in 2006.

According to the census, just over 2 million individuals aged 55 to 64 were employed in 2006, 43.0% more than in 2001. At the same time, the overall labour force participation rate for this group increased from 54.0% to 59.7%.

Farmers had the highest median age (52 years) of all occupations in 2006 (up from 51 years in 2001); they were followed by real estate agents and property administrators (51 years). Other occupations with a median age of about 50 years were ministers, bus drivers and other transit operators, senior managers in health, education, social and community services, and senior government managers.

Immigrants made up over one-fifth of Canada's labour force in 2006

Of the 17,146,100 people in the labour force in 2006, an estimated 3,634,800 were foreign-born. They accounted for slightly over one-fifth (21.2%) of Canada's total labour force in 2006, up from 19.9% previously.

Employment rates for immigrants increased between 2001 and 2006 among those aged 25 to 54 from 76.4% to 77.5%. (The employment rate for the core working-age Canadian born increased from 80.9% to 82.4% in the same period.)

Of the recent immigrants who arrived in Canada between 2001 and 2006, 636,500 (or 57.3%) were in the core working-age group. The employment rate of this population was 67.0% in 2006, up from 63.4% in 2001. This increase was faster than the gain among their Canadian-born counterparts.

The lion's share of recent core working-age immigrants went to the Ontario labour market (51.1%), followed by Quebec (19.2%) and British Columbia (15.9%). In Ontario, they recorded an employment rate of 68.5%; in Quebec, it

was 58.2%; and in British Columbia, 67.1% were working in 2006.

Labour market conditions improved for both recent immigrant men and women in the core working-age group in 2006 compared to 2001. Despite this, recent immigrants continued to have lower employment rates than the Canadian born.

Employment rates among recent immigrant men and their Canadian-born counterparts were closer in 2006 than they had been five years earlier. About 78.6% of recent male immigrants aged 25 to 54 were employed in 2006, up 4.1 percentage points from 2001. During the same period, the employment rate of Canadian-born men rose by only 0.6 percentage points, to 86.3%.

Recent immigrant women also narrowed the gap with their Canadian-born counterparts. Their employment rate rose from 53.2% to 56.8% between 2001 and 2006. This was greater than the increase experienced by Canadian-born women, whose employment rate rose from 76.3% to 78.5%.

Work from a different perspective!

Get insight into what Canadians do for a living and how much they earn with *Perspectives on Labour and Income*

What's inside

Perspectives delivers the latest research and data on Canadian labour and income issues. Inside every issue you'll find vital data, timely articles and studies on such important topics as:

- ☐ earnings and income in Canada
- ☐ savings and spending patterns
- ☐ work-life balance issues
- ☐ the aging of the labour force
- ☐ regional employment trends
- ☐ self-employment patterns
- ☐ technological changes affecting the workplace
- ☐ …and many other relevant topics!

Some describe *Perspectives on Labour and Income* as a scholarly journal, others liken it to a popular magazine. But, all agree *Perspectives* is a must read for decision-makers who want to stay on top of labour market trends.

Don't miss a single issue

Activate your risk-free subscription TODAY! Choose *Perspectives* monthly in PDF or HTML format or quarterly in print format. If at any time you decide to cancel, you'll receive a complete refund on all undelivered issues. Guaranteed!

Print issue: Published quarterly

1-year subscription: $63.00
2-year subscription: $100.80 **(Save 20%)**
3-year subscription: $132.30 **(Save 30%)**

Free* downloadable HTML or PDF file: Issued monthly

(*Note: You can view HTML or PDF issues via Internet only. Visit the Statistics Canada website at www.statcan.ca/english/ads/75-001-XIE/order_2001.htm)

How to order – Print issue

CALL toll-free	1-800-267-6677
FAX toll-free	1-877-287-4369
E-MAIL	infostats@statcan.ca
MAIL	Statistics Canada, Finance, 6-H R.H. Coats Bldg. 150 Tunney's Pasture Driveway Ottawa, Ontario K1A 0T6

Print format: In Canada, please add **either** GST and applicable PST **or** HST. No shipping charges for delivery in Canada. For shipments to the United States, please add $6 per issue. For shipments to other countries, please add $10 per issue. Federal government clients must indicate their IS Organization Code and IS Reference Code on all orders.

Canadian Social Trends

Unparalleled insight on Canadians

SUBSCRIBING TO *CANADIAN SOCIAL TRENDS* MEANS...

...GETTING THE SCOOP ON TOPICAL SOCIAL ISSUES

What's happening today? Each issue of ***Canadian Social Trends*** explores the realities that we are dealing with now.

...BEING ON THE FOREFRONT OF EMERGING TRENDS

Canadian Social Trends gives you the information you need to understand and prepare for what's coming down the road.

...OBTAINING THE MOST ACCURATE DATA AVAILABLE ON CANADA

Experts analyze data collected by Statistics Canada, ***the*** first-hand source of information on Canada. You can rely on these data to be the latest and most comprehensive available.

Canadian Social Trends offers you insights about Canadians that you can use to develop pertinent programs, must-have products and innovative services that meet the needs of 21st century Canadians.

Take advantage of this opportunity today!

Subscribe now by using any one of the following methods:
Call toll-free 1 800 267-6677
Fax toll-free 1 877 287-4369
E-mail infostats@statcan.ca

Canadian Social Trends is $39 /year for a print subscription. In Canada, please add either GST and applicable PST or HST. No shipping charges for delivery in Canada. Please add $6 per issue for shipments to the U.S. or $10 per issue for shipments to other countries. Visit our website at www.statcan.ca for more information about the **free** online version of ***Canadian Social Trends***.