Demographics – Canada

Version

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Purpose

Demographics Canada covers the essential characteristics of population, households, dwellings, labor force, and income using a combination of the latest census information and updated household counts.

Where possible, the variables have been chosen and defined to be similar to the variables for the United States while still retaining the demographic distinctions between the two countries. The Canadian dataset includes much more detailed content on language and less on race, reflecting the essential divide between English and French Canadians.

The Canadian datasets include:

- Current year demographic estimates
- Five year projections for key demographics
- Consumer expenditures
- Household finance and wealth
- Crime Risk Canada
- Business Establishments and Employees
- Demographic Dimensions
- Panorama CanAm Segmentation

Documentation for Panorama CanAm and Crime Risk are available in separate documents.

Content

A wide range of core demographic topics are covered, including:

Population

- Population by age (5 year cohorts)
- Population by sex
- Population by age and sex (5 year cohorts)

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- Group quarters population
- Marital status
- Educational attainment
- Visible minority population
- Mother tongue
- Language spoken at home
- Ethnic origin
- Citizenship and immigration status
- Year of immigration

Households

- Type of household (family / non-family)
- Household size
- Age of householder
- Mover status (1 and 5 year)

Labor Force

- Employment status, unemployment, and labor force participation
- Employment by industry
- Employment by occupation
- Employment by class of worker
- Means of transportation to work
- Travel time to work
- Time leaving for work

Income

- Aggregate, average, and median household and personal income
- Households by income (13 groups)
- Persons 15+ by income (12 groups)
- Average and aggregate disposable income

Dwellings

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- Occupancy status
- Tenure
- Condominium status
- Units in Structure
- Year structure built
- Average value of owner occupied housing
- Average rent

For information on specific variables, please consult the Master Variable List Canada document.

Methodology

A. Overview

Exceed Analysis estimates a number of consumer data products at the 6-digit postal code level for all of Canada. The process involves modeling survey data from various levels of geography down to the final Canada Post 6-digit postal code level. Although these estimates can be based on a number of data sources, they rely on two key data inputs: First, Statistics Canada releases the full Census variable list of demographic variables (over 2,200) at the dissemination area (56,589 regions) or for about every 250 households. Second, Canada Post releases 6 digit postal codes (762,696 in 2020) with individual coordinates and household counts annually.

The process begins with survey data for the most recent year, which can be at the Provincial/Territory level (13), Census Division (293 regions), Census Metropolitan Area (35 regions), Economic Region (76 regions) or as often the case some aggregation or combination of geography. This data is then distributed down to the dissemination area (DA) level using the most recent Census data.

The limited availability of data at the postal code level creates a debate about the most appropriate level of detail for data

products. While DA level data is easily the most accurate, it lacks the detail and convenience of postal code level data, particularly for targeted marketing. Exceed navigates this trade-off between accuracy and detail by estimating data at the most accurate DA level. Postal code data at the 6 digit level, which includes household numbers, is then used to distribute the DA level data down to the individual latitude and longitude of each postal code. This ensures that data distribution mirrors the geographical population growth in Canada. It also means that although individual postal codes within a DA may have different population numbers, they will all have the same average value (i.e. demographics).

In lower population DAs, where the number of actual records for a particular variable are less than 4, Statistics Canada suppresses the data to protect the confidentiality of individual respondent's personal information. This shows up as missing values, which are estimated using a geographical nearest neighbour algorithm.

B. Demographic Data

Population estimates are based on Statistics Canada's annual population survey which is released at the most detailed level (all ages and gender) by Census Division. The distribution to lower levels of geography are dependent on the most recent Canada Post household counts. Household counts are aggregated and reconciled to DAs dissemination area and dissemination block average household size control totals from the latest Census. The end result is a comprehensive estimate of population synchronized to Canada Post household counts.

Statistics Canada also released population and dwelling counts at the more detailed dissemination block level (489,676 regions) for the Census. While this would add additional detail to the population distribution within each DA, we don't use this data because of a misalignment between dwelling counts from Canada

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Post postal code coordinates and Statistics Canada geography. Instead, we rely on the dwelling count relationship at the more aggregated DA level for a higher level of accuracy.

Income estimates are based on Statistics Canada's annual income survey and taxfiler data when applicable. Distribution to lower levels of geography is based on the income distribution from the latest Census income distribution combined with the impact of population and household counts from Canada Post. This assumes that population growth within a particular geographic region will have similar income and demographic characteristics to existing households.

The weakness of the income data is that its upper end category is too low. The upper end of the distribution for individuals and household income is $150,000 and over, and $200,000 and over, respectively.

Marital status, visible minority, labour force, occupation and visible minority estimates follow a similar process to income and population. Annual surveys for each category at various levels of geography are modeled down to the DA level using the latest Census data and then distributed across 6 digit postal codes using the latest population estimates and household counts.

Family Structure, Education, Ethnic Origin, Mother Tongue and Language Spoken Most Often at Home variables do not have current annual surveys. As a result, these estimates are based on the latest Census data at the DA level and then ratio-adjusted to the most recent household and population counts at the postal code level. What this means is that when household and population counts increase as a result of the growth in the Canada Post postal code data, the specific ethnic mix within a DA is assumed to remain unchanged from the last Census.

The fact that population growth in Canada is primarily based on immigration makes this an important assumption. And while

immigration from country of origin and province of destination is available, the data is not available together. This means that to add further detail and model actual immigration from country of origin to individual Canadian neighbourhoods, it requires many qualitative assumptions open to debate and therefore additional error.

C. Consumer Spend Data

Consumer spend data is based on Statistics Canada's annual Survey of Household Expenditures. Provincial survey expenditures are estimated by household for each income quintile (5 levels). This survey data is then modeled to the DA level based on the latest Census income quintile data and then to the postal code level using average household expenditures by DA.

The most technical part of modeling spend data involves imputing missing survey values where survey responses are too low and therefore suppressed. Data is imputed using a variety of methods including previous surveys adjusted for growth using other quintiles and the use of aggregated regional geography ratio-adjusted for provincial differences.

The merchandise line and retail potential summaries have been constructed from the consumer expenditure data using translation tables which, aside from currency valuation differences, allow seamless transition between the Retail Potential databases for Canada and the United States.

D. Consumer Wealth Data

Consumer wealth data is based on the Statistics Canada Survey of Financial Security that is typically available every second year. Like consumer spend data, wealth survey results are available by income quintile and therefore estimated at the DA level using the latest Census data similarly to consumer spend data. For the Northern Territories, which are not covered by the survey, data is

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modeled from a financial health index survey by the Canadian Council on Social Development.

There are a number of potential issues with the wealth data. First, data is self-reported which is easily totaled for financial items, but it is much more difficult for survey respondents to report non-financial assets, particularly real estate and business equity. Second, the timing and nature of survey results, coupled with the pace of change in variables like real estate, means values will be lagging and lower than actual values in real time.

Geographic Differences

To those users accustomed to data for the United States, the geography levels, and their approximate equivalencies are presented below:

Name	Description	US Equivalent
DA	Dissemination Area	BG Block Group
CS	Census Subdivision	PL Place and CS County Subdivision
CD	Census Division	CO County
MA	Metropolitan Area	CB County Based Statistical Area
PR	Province / Territory	ST State
FS	Forward Sortation Area (Postal)	ZI ZIP code

H3 hexagon geometry data is available for levels 3 through 7.

Data Sources

Data sources include:

- Statistics Canada, annual population estimates
- Census of Canada 2011, 2016, 2021
- Canada Post, current delivery statistics

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Further Information

Contact customer service at 877-944-4AGS or email support@appliedgeographic.com.

Exceed Analysis can be reached at 204-757-2358, or visit their website at http://www.exceedanalysis.com