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Assignment Program User Guide for the 1996 Canadian Deprivation Index

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AUTHORS

Denis Hamel, statistician
Philippe Gamache, statistician
Bureau d'information et d'études en santé des populations, Institut national de santé publique du Québec

REVISOR

Christine Blaser, Ph. D., senior scientific advisor
Bureau d'information et d'études en santé des populations, Institut national de santé publique du Québec

COORDINATOR

Jérôme Martinez, chief of the scientific unit
Bureau d'information et d'études en santé des populations, Institut national de santé publique du Québec

PAGE SETTING

Lyne Théorêt, administrative agent
Bureau d'information et d'études en santé des populations, Institut national de santé publique du Québec

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1 Introduction

The 1996 deprivation index's assignment program is a SAS program with conversion tables and a macro named "AssignationInd_Can1996_eng." This program can assign a deprivation index to any SAS file containing a six-digit postal code (mandatory) and a municipal/census subdivision code (optional). An index is assigned by linking these codes to a dissemination area (DA), which is the geographical unit of the census that the deprivation index is based on.

Four versions of deprivation indexes can be assigned on a Canada-wide scale: a national version, a regional version where Canada is divided into five major regions (Atlantic, Québec, Ontario, Prairies, British Columbia), a metropolitan version where the three largest census metropolitan areas (CMAs) (Montréal, Toronto, and Vancouver) are considered separately, and a version for geographic zones where the major CMAs, other CMAs, census agglomerations (CAs), and rural communities each form one group. The program can also assign different standardized territories that may be worth considering when studying deprivation.

2 Conversion tables from the Postal Code Conversion File (PCCF)

FCP : This table contains certain non-unique postal codes (linked to several DAs) and a weight variable that reflects the proportion of the postal code population that lives within each DA associated with it. In FCP, the deprivation index is also added.

3 Other table

MUNIC : This table links the municipal (census subdivisions) codes from 1991, 1996, 2001, 2006, 2011, and 2016 so that an index can be accurately assigned even if the input file contains old municipal codes.

4 Macro « AssignationInd_Can1996_eng »

1) In the program, the user must first define the file names and path of the directory where the four previously listed tables were saved. This is done in the FILENAME and the LIBNAME statements. The following DATA statements must not be changed nor the code defining the macro (from *%macro AssignationInd_Can1996_eng* (…) to *%mend AssignationInd_Can1996_eng*).

2) While still in the program, the user must define four parameters:
   - The input file (IN) they want to assign the deprivation index to (must be a SAS file)
   - The name of the output file (OUT)
   - The name of the six-digit postal code variable (PCODE)
   - The name of the five- or seven-digit municipal code variable (if necessary).

   For example, if the file name is BIRTH, the output file name is BIRTH_INDICE, the name of the postal code variable is PCODE and the name of the municipal code variable is MUNIC, the four statements would become:

   % AssignationInd_Can1996_eng (in=BIRTH, pcode=PCODE, munic=MUNIC, out=BIRTH_INDICE);

   Important :

   - When the municipal code is not used, the name of the municipal code variable must be set to 0 (zero):

     % AssignationInd_Can1996_eng (in=BIRTH, pcode=PCODE, **munic=0**, out=BIRTH_INDICE);

   - The rest of the program must not be changed.

   - The output file will contain the same variables as the input file in addition to the variables linked to the 1996 deprivation index that are listed and described below.

3) Once the directory has been modified and the parameters have been defined, the macro can be launched. It simply runs the rest of the program, as summarized below:

   - It reads the input file and creates a unique identification number and a random number between 0 and 1 for each of the saved versions of the file. This random number is required if the postal code is associated with more than one deprivation index.
   - If the municipal code is part of the matching key, and therefore the parameter is not 0, the index is assigned according to the following steps:
     1. Matching is done with the FCP table using a matching key made up of the postal code and municipal code. If there is more than one valid index for the “Postal code – Municipal code” combination, one of the national, regional, or local[1] indexes is assigned at random based on the proportion of the population that uses that postal code and municipal code.
     2. For cases not matched in Step 1, matching is done with the FCCPINDICDEUNIQ table using a matching key made up of the postal code and municipal code.
     3. For cases not matched in Step 2, matching is done with the FCCPINDICEDOUBLE table using a key made up of the postal code and municipal code. If there is more than one

[1] For local indexes, the fact that some DAs cover more than one local territory is taken into account.

national, regional, or local index for the “Postal code – Municipal code” combination, one of these indexes (which all have the same probability of being selected) is assigned at random.

- If the municipal code is not part of the matching key and the parameter = 0, or if the municipal code is part of the matching key and there are still unmatched cases after Step 3, the program assigns indexes as follows:

    4. Matching is done with the FCP table using a key made up of the postal code alone. If there is more than one national, regional, or local index for the “Postal code – Index” combination, one of these indexes is assigned at random based on the proportion of the population that uses that postal code and municipal code.
    5. For cases not matched in Step 4, matching is done with the FCCPINDICDEUNIQ table using the postal code.
    6. For cases not matched in Step 5, matching is done with the FCCPINDICEDOUBLE table using the postal code. If there is more than one valid index for a given postal code, a national, regional, or local index (which all have the same probability of being selected) is assigned at random.

Note :

- Unmatched cases, including postal codes that are invalid, incorrect, or that are not part of the PCCF, are assigned index values of 0.
- Cases matched to a DA with no deprivation index will be assigned missing values as a deprivation index.
- Sortation order in the input file is important. Slightly differing results will be obtained if the sortation order varies from one assignation to another.

As mentioned above, the output file will be the same as the input file to which the following variables will be added:

- *centmat* and *centsoc* : the centiles of the national index’s material and social components.
- *quintmat* and *quintsoc* : the quintiles (1 to 5) of the national index’s material and social components (1 being the most privileged quintile, 5 being the least privileged).
- *quintmatRC* and *quintsocRC* : the quintiles (1 to 5) of the Canadian regional index’s material and social components (1 being the most privileged quintile, 5 being the least privileged).
- *quintmatCMA* and *quintsocCMA* : the quintiles (1 to 5) of the metropolitan index’s material and social components (1 being the most privileged quintile, 5 being the least privileged) for the Montréal, Toronto and Vancouver CMAs separately.
- *quintmatZONE* and *quintsocZONE* : the quintiles (1 to 5) of the material and social components (1 being the most privileged quintile, 5 being the least privileged) of the index for geographic zones.

- *Zone*: geographic areas
    1 Montréal, Toronto, and Vancouver CMAs
    2 Other CMAs, such as Québec City, Trois-Rivières, Hamilton, Edmonton, Regina, etc. (over 100,000 individuals)
    3 CAs (between 10,000 and 100,000 individuals)
    4 Small towns and rural communities (under 10,000 individuals)